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ABSTRACT

Five of the nine papers in the compilation concern aurally handicapped and deaf-blind children. Described are a home training and nursery program in a publ.c school setting for hearing impaired children aged 18 months to 4 1/2 years, problems and progress in the Illinois state plan for hearing impaired children, and new trends in deaf-blind education, particularly area centers for serving the deaf-blind. Parents of deaf-blind children and several avenues for productive study in the evaluation and education of deaf-blind children are also discussed. The remaining four papers treat language and behavior problems. Two focus upon characteristics and management of elective mutism in children, and the efficacy of operant conditioning in affecting the verbal behavior of young children with severe language disabilities. The other two describe a preventive approach to speech and language delay used with socioeconomically disadvantaged preschool children (a high-risk population), and a cooperative summer language and behavioral program entitled Repleb (Reinforcing Purposeful Language and Behavior) for 5 to 8-year-old mentally retarded children. (KW)

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Exceptional Children Conference Papers:

Deaf-Blind, Language, and Behavior Problems

Papers Presented at the

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Miami Beach, Florida

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Compiled by

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PREFACE

Deaf-Blind, Language, and Behavior Problems is a collection of nine papers selected from those presented at the 49th Annual International CEC Convention, Miami Beach, Florida, April 18-24, 1971. These papers were collected and compiled by The Council for Exceptional Children, Arlington, Virginia. Other collections of papers from the Convention have been compiled and are available from the ERIC Document Reproduction Service. Other collections may be found by consulting the Institution Index of Research in Education under Council for Exceptional Children or the Subject Index under Exceptional Child Education. Titles of these other collections are:

Diagnostic and Resource Teaching
Gifted and Developmental Potential in Women and the Disadvantaged
Infantile Autism
Local, State, and Federal Programs
Physical Handicap
Pre and Inservice Teacher Preparation
Specific Subject Programs for EMRs and TMRs
Trends and Issues in Special Education

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CHARACTERISTICS AND MANAGEMENT OF ELECTIVE MUTISM IN CHILDREN

Ronald Friedman, and Nicholas Karagan,

University of Iowa, Iowa City

INTRODUCTION

The purpose of this paper is to discuss the phenomenon of elective mutism as a learned response and to present some techniques whereby speech can be elicited from the electively mute child. The child who is electively mute presents a particularly vexing problem. The truth of this statement is nowhere more apparent than in the classroom. Because of the highly verbal nature of the exchanges that occur within the school, the child who cannot speak or who choses not to speak poses a problem in education that often appears insurmountable.

The electively mute child may be defined as a child who does not speak, but who has no speech or language disorder and no physical defect of the speech mechanism. He is not aphasic nor is he of sufficiently deficient general intelligence so as to be unable to formulate speech and language. Usually the electively mute child will speak under certain limited circumstances. The term elective mutism was first used by Tramer[11] to describe two children who spoke only to certain people. Most frequently, it has been observed that electively mute children will speak to immediate family members, and of

the immediate family, the mother is the most common individual to whom the child will speak. Consequently the matter of elective mutism frequently escapes the attention of professional observers until the child is five or six years old and he is enrolled in school.

The literature on elective mutism, as has been noted by others,[4,6,12] includes primarily two types of papers: descriptive case studies[10] and reports dealing with the efficacy of therapy with electively mute children. With two exceptions,[6,9] intensive therapy with electively mute children has been limited to traditional techniques of psychotherapy, psychoanalysis and hypnosis.[1,2,4,5,7,8,9,12] Although varying degrees of success and failure are reported by these investigators, Elson and his co-workers[4] in the most thorough long term investigation of a group of mute children concluded, "...superficial counselling, suggestion, or exhortation were quite ineffective as were our attempts at insight or uncovering psychotherapy." Reid[9] and Nolan and Pence[6] report success, in one case each, utilizing behavior modification techniques.

CHARACTERISTICS OF ELECTIVELY MUTE CHILDREN

Our experience with 13 electively mute children seen in our psychological diagnostic clinics at the University of Iowa along with a careful consideration of cases reported in the literature form the basis for the following discussion. Referral of all these children to our clinics had to some significant extent developed from the school. They were all in their first or second year of school and all were described by their teachers as mute. Approximately one half of the children referred to the clinic had been

threatened with dismissal from school because of their "refusal" to talk. Formal intellectual assessment was possible with all but three children. However, considering the need for frequent departure from standardized procedures of assessment this data should be viewed with some caution. IQ's ranged from 56 to 97 with a mean of 83.

In general, electively mute children can be divided into two groups. The first group appears to use refusal to speak in a coercive fashion in order to manipulate their immediate environment. In the other group, it appears as if speaking is sufficiently anxiety producing so that the child choses to remain mute. It has been suggested that the reduction in anxiety that results from mute behavior serves as a reward and reinforces the act of remaining mute. Characteristically, these children are described by their parents, teachers and friends as shy and socially inept. Parents frequently admit that they too are shy and socially withdrawn and it is not uncommon for other family members to be similarly described.

As noted, the elicitation of speech from these children is difficult and frustrating. If, however, the response of mutism, or silence, can be understood in terms of the child's learning experiences, management of these children indeed becomes easier. Dollard and Miller[3] make the following observation. "It is possible to learn either to stop talking about certain limited subjects or to stop talking altogether in some situations... It is interesting to note that one of the frequent symptoms of extreme combat anxiety cases is an interference with speech that may run

from complete mutism to hesitation and stuttering. Similarly, the sufferers from acute stage fright are not able to speak. Many animals tend to stop vocalizing when frightened and it is obvious that this tendency is adaptive in preventing them from attracting the attention of their enemies. In light of this evidence, one might suspect that the drive of fear has an innate tendency to elicit the response of stopping vocal behavior".

Based on the hypothesis that the non-verbal behavior of the mute child is learned, and occurs in response to anxiety or fear, those techniques that seek to force the child to speak appear doomed to failure from the start. This is simply because the pressure, whatever that might be, that is brought to bear upon the child in an effort to elicit speech, simply serves to increase the child's anxiety or fear, thus decreasing the probability of the response of speech.

MANAGEMENT OF ELECTIVELY MUTE CHILDREN

What then of management of these children? What approach available to the parent and classroom teacher can be expected to be effective? The following are suggestions derived from previous reports and our experiences with 13 mute children who were referred to our clinics for evaluation and mangement recommendations. It should be emphasized at the outset that those working with the child cannot expect dramatic gains in speech immediately. Because of the nature of the problem, it is only through repeated experience over a substantial length of time that the child can be brought to a point where he will produce speech appropriately.

1. Primary consideration should be given to the avoidance of any coercive practices or pressures designed to force the child to speak. It is tempting to consider bribery or the withholding of treats or rewards in an effort to get the child to talk. Nonetheless, these tactics, by undermining the child's security and by increasing his anxiety, can only be expected to lead to a strengthening of his silence.

2. Include the child in all peer group activities. At home or in the school, the child should be involved in activities with other children. Nonetheless, should the child be reluctant or fearful to participate, he should not be forced to do so.

3. Within the confines of the child's own home or under other circumstances where the child speaks or appears comfortable with speech, emphasis should be placed upon reading and story telling and other verbal activities.

4. An effort should be made on the part of the parents to encourage visits within their own home by the child's relatives and peers in order that the child may come to speak in their presence.

5. The child should be encouraged in non-verbal, non-threatening, interpersonal relationships with adults in the classroom and at home. This can take the form of doing puzzles or doing workbook exercises. The teacher should maintain her speech and talk to the child. Although she should judiciously allow opportunity for the child to speak or to express himself, she should avoid any action that might be fear producing for the child, such as coercion or an expectancy for speech. The mute child is frequently cooperative in making non-verbal responses to the teacher or other adults

he encounters.

6. When an adequate relationship has been established between teacher and child, as previously described, an initial attempt may be made to encourage speech on the part of the child by asking him, in a one-to-one situation, away from the class, simple questions that necessitate only simple answers of a single word or two. These simple questions should deal with identification of simple objects such as common picture vocabulary items, i.e. "what is this?" The teacher should, at all times, be sensitive to any increase in the child's anxiety or any reluctance to speak which might indicate that the child finds the questioning and the expectation to speak threatening. If this occurs, the teacher should withdraw and continue non-verbal activity before again attempting to elicit speech. As the child progresses in making verbal responses in identifying objects, simple questions with other tasks can be introduced. Further, at one of these early stages, a recording apparatus can be introduced not only as a novelty to which these children often respond in a positive fashion; but also because there is less anxiety associated with the impersonal object (the recorder) to which the child is to respond. For the mute child the use of workbooks, vocabulary cards, etc., also fosters a less personal (and consequently less threatening) milieu than even a strictly one-to-one interpersonal exchange.

As the child's verbal behavior continues in a one-to-one situation a repetition of this program can be attempted within the classroom. However, questions should be asked only occasionally,

verbal spontaneity of the child should never be a goal, and requesting the child to perform non-verbal responses (erase the board, turn on the lights, etc.) can also be utilized in the classroom. Cautiously encouraging verbal participation in "show and tell" and in small group activities can subsequently be introduced. The regimen should then be continued, but the approach should always be supportive, not demanding and paced appropriately for the child's progress.

7. The child, along with his parents and, in fact, all of those people in whose presence he will speak, should be encouraged to participate in many activities outside the home and in the presence of those people who are strangers to the child. Again, it is important that everyone, particularly the parents and the teacher, maintain a non-coercive attitude with the child with respect to the production of speech.

As the electively mute child grows older and becomes more competent in the mangement of his environment, he generally tends to produce speech. Most treatment regimens including psychotherapeutic techniques that have attempted to speed up this process have largely met with failure. At present the most that a child's parents and teachers can do is to provide an atmosphere wherein the child's anxiety is lessened and the probability for the production of speech becomes increased. It is through management techniques such as those listed above, that parents and teachers can expect to strengthen the child's confidence in his mastery of his environment and create within him the assurance that will allow him to begin to speak.

CONCLUSION

Acceptance of mutism as a learned response provides a framework within which to consider the electively mute child. Thus far it appears the most fruitful from both a therapeutic and a research point of view. Longitudinal studies of electively mute children are currently underway. Of the 13 children seen in our clinic, all have continued in school following the clinic evaluation. Further, all referral resources have noted continued improvement in the children and no subsequent referrals have been made because of the inability to manage the child. The limited size of our sample and the passage of insufficient time preclude further generalization, reporting of more specific data, and discussion of longitudinal progress at this time. These must await further study.

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Home Training and Nursery Program for the Hearing-Impaired Child From 18 Months to 4 1/2 Years in a Public School Setting

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For the past three years, beginning in 1968, we have been involved in a very exciting project which was sponsored by ESEA, Title VI and Stockton Unified School District, Stockton, California. The project involved six hearing impaired children ranging in age from 18 months to 3 years of age together with their parents in a home training and nursery program in a public school day class. Included in these children was one partially sighted child and one deaf-blind. The project was developed in order to demonstrate that such a program of early intervention could be developed in a public school setting.

At the time our class was begun, there were less than five nursery programs for hearing-impaired in public schools in the State of California. Our objective in the project was to counsel parents in the understanding of their feelings in acceptance of their hearing impaired child. Parents require assurance that they can provide a suitable physical, emotional and intellectual environment for the normal development of their children. We wanted to teach parents how to communicate with their children by developing lipreading and language experiences and to teach children through participation in a nursery setting productive utilization of materials and to guide parents in developing independence and social skills in their children.

We modeled our program after the home training program being conducted by San Francisco Hearing and Speech Clinic under the direction of Dr. Calvert. Medical, audiological and educational psychological evaluations were the beginning steps in the program. All children were fitted with hearing aids. The teacher went into the home and showed parents how they could develop language experiences within the home using every day experiences. After

individual training in the home, a parent-oriented nursery experience was begun for mothers and children. Mothers met weekly to discuss developmental problems, language and speech, as well as their observations and experiences in the nursery. A monthly evening meeting was held in order that the fathers might attend. Special speakers from the audiological, medical, psychological and educational fields acted as moderators. We used the films on parental attitudes and the development of lipreading from the John Tracy Clinic as well as other films dealing with normal child growth and behavior. It was found that these meetings were very beneficial to parents, not only from the educational standpoint, but also the therapeutic value that they offered in allowing parents to talk with one another.

Workshops also were provided where materials were made which were suitable for use in the home in developing language and speech. Mileage was provided for those parents who could not afford to attend weekly classes. This insured their attendance both in the nursery and in the study sessions. A portable classroom with complete educational facilities was completed through Title VI funds. Many community organizations contributed to buy special equipment. The University of the Pacific, which is located in Stockton, provided their audiological services as well as assistance from student speech therapists. We provided a toy lending library so that parents might obtain suitable toys for use in the home in developing language.

When the children entered the program in 1969, language and speech skills were limited. One child had a vocabulary of approximately 100 words. Two children had a vocabulary of approximately 50 words; the remainder with an expressive vocabulary of less than

50 words. The deaf-blind child could not walk, did not respond to sound and had no speech. At the end of last year the Bettye Caldwell Preschool Inventory was administered and of the six children tested, one was in the 75 percentile, one in the 65 percentile and three ranged from 42 to 55 percentile. The results shown for each child were determined from the norms presented with the testing instrument and therefore were formulated on a normative sample devoid of the deaf and deaf-blind children which makes the results even more dramatic. The deaf-blind child was given Vineland in April 1969 and scored 1.47. He was given a Vineland in February 1970 and scored 2.7. During this time he had learned to walk and was able to respond to gross sound and voices. This child was also administered the Denver Developmental Screening Test in March 1970. He passed all gross motor skills through 14 months; all fine motor adaptive skills through 22 months; only a few of language skills through 6 months; and personal-social skills, all items, through 24 months.

In the fall of this year we administered the Apell Test and found that the three oldest children were well within the norms of an average beginning kindergarten child. It was decided in January of this year that these three oldest children would be integrated full time in kindergarten. Two are in the profoundly deaf range and one is in a moderate range of hearing impairment. Two of the children are developing excellent expressive language. All three have excellent receptive vocabulary. The experience these five months has been most exciting with these children as they are able to take their places with normal hearing children. Next year they

will be integrated again in the kindergarten but will spend approximately two hours a day with the teacher of the deaf to develop language and speech skills. The mothers of these children work one day a week in the kindergarten and will continue to do so this coming fall. The three youngest children in the project will be integrated on a part time basis next fall and continue with their teacher of the deaf for half of the school day in order that their speech and language skills will continue to grow.

The staff feels encouraged from the results of these past two years. Without the ESEA Title VI funds, our school district could not have started our program. Our parents are acquiring assurance that they can provide a suitable emotional and intellectual environment in order that their hearing impaired children may develop normally. They are learning to communicate verbally with their children. They are learning to accept and understand their hearing impaired children and to grow in their ability to develop language and speech in a home and school environment. From the initial results, the staff members associated with the project feel that it has been clearly demonstrated that a class built around the types of activities described, can be an effective addition to the regular school program.

One very interesting phase of the project the last two years has been in disseminating preschool information. Approximately eighty school districts were involved in this part of the project. The teachers involved sent materials concerning curricular activities to us. We in turn compiled the materials and sent them to those participating. We were able to send these teachers and school districts the results of our project and how they may replicate

such a program in their own district. Another very interesting sidelight in our project is that the local San Joaquin General Hospital is testing newborn infants. We have recently begun working with an 8-months old baby who is fitted with binaural aids. It is exciting to see this child growing auditorally. We feel the factors that have been so important in making our project successful were early intervention with the parents and the children, early amplification and the involvement of the parents.

New Trends in Deaf-Blind Education

Lars Guldager
New England Regional Center for Deaf-Blind Children, Watertown, Massachusetts

Since 1937 when Laura Bridgeman was educated at Perkins School for the Blind by Dr. Howe, its first director, this agency has been the initiator of services to deaf-blind children throughout the world. Programs overseas have been established after initial contact with Perkins. At the moment almost all the overseas programs are staffed by teachers who have received their training in Watertown. After the rubella wave in 1963-65 swept the country, it was obvious that 1969-70 would be the year when these children would be ready for an educational program. Progressive educators were able to get legislation passed so services to deaf-blind children throughout the nation would be established. In the beginning of 1968, Public Law 90-247 was signed and eight centers to serve deaf-blind children were established. Part C of the act states: "It is the purpose of this act to provide, through a limited number of model centers for deaf-blind children, a program designed to develop and bring to bear upon such children, beginning as early as feasible in life, those specialized, intensive professional and allied services, methods and aids that are found to be most effective to enable them to achieve their full potential for communication with and adjustment to the world around them, for usefull and meaningful participation in society and for self-fulfillment." The term Deaf-Blind Child means a child who has both auditory and visual impairments, a combination of which causes such severe communication and other developmental and educational problems that he cannot properly be accommodated in special education programs either for the hearing handicapped child or the visually handicapped child. (Policies and Procedures, Centers and Services for Deaf-Blind Children, Department of Education, 1969.) This year two more centers have been added to the eight original centers,

which serve all fifty states. The following agencies serve as coordinating agencies for the surrounding states:

Alabama Institute for the Deaf and Blind Talladega, Alabama	Alabama Florida Georgia Kentucky Mississippi Tennessee
State Department of Education Scaramento, California	Arizona California Hawaii Nevada
Colorado Department of Education Denver, Colorado	Colorado Kanasa Nebraska New Mexico Utah Wyoming
Perkins School for the Blind Watertown, Massachusetts	Connecticut Maine Massachusetts New Hampshire Rhode Island Vermont
Michigan State School for the Blind Lansing, Michigan	Illinois Indiana Michigan Ohio Wisconsin
Minnesota Department of Public Welfare St. Paul, Minnesota	Iowa Minnesota Missouri North Dakota South Dakota
The New York Institute for the Education of the Blind Bronx, New York	Delaware New Jersey New York Pennsylvania

North Carolina Department of Public Instruction Raleigh, North Carolina	District of Columbia Maryland North Carolina South Carolina Virginia West Virginia
Callier Hearing and Speech Center Dallas, Texas	Arkansas Louisiana Oklahoma Texas
Washington State School for the Blind Vancouver, Washington	Alaska Idaho Montana Oregon Washington

This means that no deaf-blind child throughout the United States should be without consultative services; as of this date programs to serve all the four thousand deaf-blind children in the country have not been established. It is the aim of the services of the ten centers to identify the deaf-blind child as early as possible in order to give parent counseling and teach the parents about non-verbal communication and prelanguage development as well as social problems which may occur in the development of the deaf-blind child. In 1968 a National Center for Deaf-Blind Youth and Adults was created through Public Law 90-99. The Center is supposed to create services for all deaf-blind youth and adults throughout the nation. The Center is located in New York under the auspices of the Industrial Home for the Blind. It is not the plan to bring all deaf-blind youth and adults to New York but to establish regional centers to serve this population. The two acts should be able to give services to deaf-blind persons from birth to maturity.

The New England Center for Deaf-Blind Children is formed by a coordinating agency and other participating agencies. The effort of these agencies should established comprehensive services of parent counseling, medical and educational evaluation, preschool programs, long term school programs for both trainable and educable children, prevocational training and eventual coordination and transfer of the child to the National Center for Youth and Adults. Each of the agencies that form the New England Center give part of the services. This concept sponsored by the federal government minimizes over-lapping services and encourages cooperation between the different disciplines working with exceptional children.

The federal involvement in establishing these ten centers for deaf-blind children has created a model for how to solve problems for other handicapped groups. The center concept has pulled people together to mutually reach solutions. Through local legislation, state agencies have been able to pay tuition or part of the tuition for these children. The cost is tremendous for educating these children because individual attention is very important. Cooperation between agencies has so far been able to overcome the problems, but if federal participation in funding does not increase there is little hope for the programs in the future. In the New England Area tuition for a deaf-blind child is usually shared by three agencies: The state, the federal government, and a private agency. At the moment there are four residential programs for deaf-blind children. Several children are placed in day programs for multiply-handicapped

children or for trainable retarded children.

The primary objective of an area center for deaf-blind children is to develop and make available comprehensive effective services for all deaf-blind children in a geographic area. Because of the breadth of services needed by deaf-blind children of all ages, and beeause of the scattered geographic distribution of these children who need to be served by these centers, it is essential that a number of agencies, both in public and private, join together in developing a comprehensive center. All agencies involved in such cooperative work of the center are considered participating agencies.

The coordinator of each center is located in a designated coordinating agency which may also be a participating agency, and is responsible for planning with those agencies involved in the center program to do the following:

1. Provide all deaf-blind children in the center area with essential services by the proper utilization of existing resources.
2. Develop new services where needed.
3. Improve and expand existing services where appropriate.

It is the responsibility of the coordinator to see that whose services required by the act are provided by the center through its participating agencies.

The center provides all the following basic services to deaf-blind children as required by the act:

1. Comprehensive diagnostic and evaluation services.
2. Education, adjustment and orientation programs.
3. Effective consultative services for parents, teachers, and others who play a direct role in the lives of deaf-blind children to enable them to understand the special problems of such children and to assist in the process of education, adjustment and orientation.

provided

Additional activities, by the act but not required, include:

1. Research, development or demonstration of new or improved techniques to be used in education of deaf-blind children.
2. In-service training of professional personnel who are working or intending to work with deaf-blind children.
3. Materials or information about practices found effective in working with deaf-blind children.

The last few paragraphs are quoted from the flier "New England Center for Services to Deaf-Blind Children".

It has been the experience of the New England Coordinator that this concept brought people together from many disciplines of exceptionality to solve the problems together. This concept has not only served deaf-blind children, but has initiated thinking about providing comprehensive services to all multiply handicapped children.

PRESS COPY

21

OPERANT CONDITIONING: ITS EFFICACY IN AFFECTING THE VERBAL BEHAVIOR OF YOUNG CHILDREN WITH SEVERE LANGUAGE DISABILITIES

Henry B. Pierce
University of Massachusetts

The purpose of this study was to measure the efficacy of operant conditioning as a technique in affecting the verbal behavior of young children with severe language disability by attempting to modify in one child, the verbal behavior directly, in a second child, the verbal behavior indirectly, in a third child, the verbal behavior directly and indirectly at the same time.

The three children for this investigative study were selected from the Boston University Psycho-educational clinics on the basis of the following criteria: (1) they were chronologically of approximately preschool age and manifested a severe oral language impairment--specifically, nonverbalness or near nonverbalness--resulting from unknown causes, (2) they manifested a discrepancy between their estimated intellectual potential and actual level of performance, which was not secondary to severe generalized mental retardation, severe emotional disturbance, or severe sensory loss. The chronological age range was 4 years 6 months to 7 years 3 months. Subject 1 participated in a total of 20 hourly experimental sessions, while subjects 2 and 3 each participated in a total of

25 sessions.

The subjects were assigned randomly by the experimenter to each of the three methodologies under investigation. Each subject's baseline of communicative behavior was determined on the basis of several observations of the child in the experimental room in a free-play situation and in more formal situations in which discrete stimuli were presented. In the formal situations, the Parsons Language Sample, the Hejna Developmental Picture Articulation Test, and the Bryngelson-Glaspey Articulation Test were administered. In addition, case study reports, verbal reports from the classroom teacher of the Psycho-education preschool nursery class (subject 3 only) and from the parents were utilized also.

Subject 1, a female, C.A. 7 years, manifested a vocal/verbal baseline behavior consisting of a few jargon vocalizations and one verbalization "bye." Subject 2, a male, C.A. 4½ years, had a vocal baseline behavior consisting of jargon and, in addition, was hyperactive with a very short attention span. Subject 3, a male, C.A. 6 years, had a baseline behavior consisting primarily of unintelligible jargon, except for 18 one-syllable and 3 two-syllable verbalizations.

In the experimental period the concern was with shaping each subject's existing baseline level of vocal/verbal behavior toward the specific objectives of each methodology under investigation by means of reinforcement procedures. Positive reinforcers in the form of social approval ("good," "good boy," or "good girl," "that's right") and food were made contingent (in Methodology 1) upon the child's vocal/verbal responses to the presentation of vocal/verbal stimuli on a schedule

of selective reinforcement; (in Methodology 2) upon the child's spontaneous vocalizations and attending behavior while the experimenter was providing an environment of speech and language stimulation; (in Methodology 3) upon the child's vocal/verbal responses to the presentation of vocal/verbal stimuli on a schedule of selective reinforcement and also upon the child's attending behavior.

To determine the effect of reinforcement on response, a nonreinforcement interval, designed for five hours, was instituted at the end of ten hours of experimental intervention. During this period, no primary or social reinforcement was delivered by the experimenter. Following this interval of nonreinforcement, primary and social reinforcement were reinstated.

In Methodologies 1 and 3 discrete stimuli in the form of imitative-motor, echoic, tacting, and manding behavior were presented sequentially by the experimenter to the subjects.

The establishment of specific vocal/verbal behaviors (in methodologies 1 and 3) was accomplished through the process of shaping, involving the use of differential reinforcement and successive approximations to develop new behaviors.

Disruptive behavior was extinguished or brought to a minimal level by utilizing a procedure known as (TO) or "Time Out from Positive Reinforcement." In this procedure, the experimenter's usual attentive behavior was abruptly terminated by lowering his head or turning away from the subject for a brief interval of time until the subject's undesirable behavior ceased. During this interval, the experimenter neither

responded to the child nor provided any other opportunity for social or food reinforcement.

The results of the study are as follows:

1. The vocal/verbal behavior of all subjects in the study increased during the period of experimental intervention.

SHOW SLIDE 1

Slide 1 shows the percentage of vocal/verbal responses made by Subject 1 under the influence of Methodology 1 in relation to the number of stimuli presented each session. It should be noted here that the nonreinforcement interval, originally designed to be a period of complete nonreinforcement, is separated into two nonreinforcement intervals--one partial and one complete. The reason for this is that while the experimenter withdrew food and praise as reinforcers, he neglected to stop smiling. It was not until four sessions had elapsed that the experimenter realized why the anticipated decrease in vocal/verbal responses was not forthcoming. In sessions 15 and 16, smiling behavior was also withdrawn as a reinforcer, and the vocal/verbal responses decreased.

SHOW SLIDE 2

Slide 2 shows the frequency per session of non-disruptive or "babbling" vocalizations for Subject 2 under the influence of Methodology 2. Non-disruptive vocalizations were all spontaneous emissions since reinforcement was contingent upon attending behavior and no shaping of vocal/verbal behavior was attempted with this methodology. It is to be noted that there was a distinctive decrease in non-disruptive vocalizations

during the nonreinforcement interval, sessions 11-13.

SHOW SLIDE 3

Slide 3 shows the percentage of vocal/verbal responses made by Subject 3 under the influence of Methodology 3 in relation to the number of stimuli presented each session. Again it is to be noted that there was a distinctive decrease in non-disruptive vocalizations during the nonreinforcement interval, sessions 11-15.

Additional results of the study were:

2. Disruptive behavior increased in all three subjects during the nonreinforcement period.

3. Disruptive behavior in all three subjects decreased immediately following the nonreinforcement period to or below the operant level observed immediately prior to the nonreinforcement period.

SHOW SLIDE 4

Slide 4 shows the total TO or Time Out Time From Reinforcement per session imposed on Subject 1 (Methodology 1) for disruptive behavior. It is to be noted that disruptive behavior increased during the period of partial and complete nonreinforcement.

SHOW SLIDE 5

Slide 5 shows the amount of time in each session consumed by disruptive vocalizations (crying, whining, and screaming behavior) by Subject 2 (Methodology 2). It is to be noted that there was a sharp increase in disruptive vocalizations during the nonreinforcement interval.

SHOW SLIDE 6

Slide 6 shows how the frequency of disruptive verbalizations, mainly jargon behavior, decreased to a minimal level over the experimental period and was extinguished by session 20. This type of behavior increased decidedly during the nonreinforcement interval.

Some specific results, by subject, include the following:

Subject 1

1. Tacting and echoic behavior increased during the reinforcement period but decreased during the nonreinforcement interval.

2. Verbal response length increased to two-syllable verbalizations during the reinforcement period.

Subject 2

1. Spontaneous nondisruptive vocalizations (babbling) increased during the reinforcement period but decreased during the nonreinforcement interval.

2. Total disruptive nonattentive behavior was nearly extinguished during the reinforcement period, but increased sharply during the nonreinforcement interval.

3. No verbalizations were produced during the experimental period.

4. Attending behavior improved substantially during the experimental period.

Subject 3

1. Tacting, echoic, and manding behavior increased during the reinforcement period, but decreased during the nonreinforcement interval.

2. Verbal response length increased to four-syllable words and five-word sentence responses during the reinforcement period.

3. Attending behavior improved substantially during the experimental period.

Within the limits of the design and sample of this study, the following conclusions are made in regard to the use of operant conditioning through reinforcement procedures in affecting the vocal/verbal behavior of essentially nonverbal children.

Operant conditioning, in general, is an efficient technique in affecting the verbal and nonverbal behavior of young children with severe language disability. It is particularly effective when used directly to attempt modification of the verbal behavior only.

Operant conditioning is not as efficient a technique in affecting the verbal behavior of young children with severe language disability when used indirectly, i.e., when the reinforcement is contingent upon attending behavior and the experimenter is providing a highly stimulating speech and language environment. It is effective, however, in modifying the attending behavior of the child when used directly on this type of behavior.

After conditioning to positive reinforcement has been established a period of nonreinforcement is an accurate indicator of the influence of reinforcement on the verbal and nonverbal behavior of the subject.

Operant conditioning procedures should be considered as another possible technique or approach which may be used in speech and language

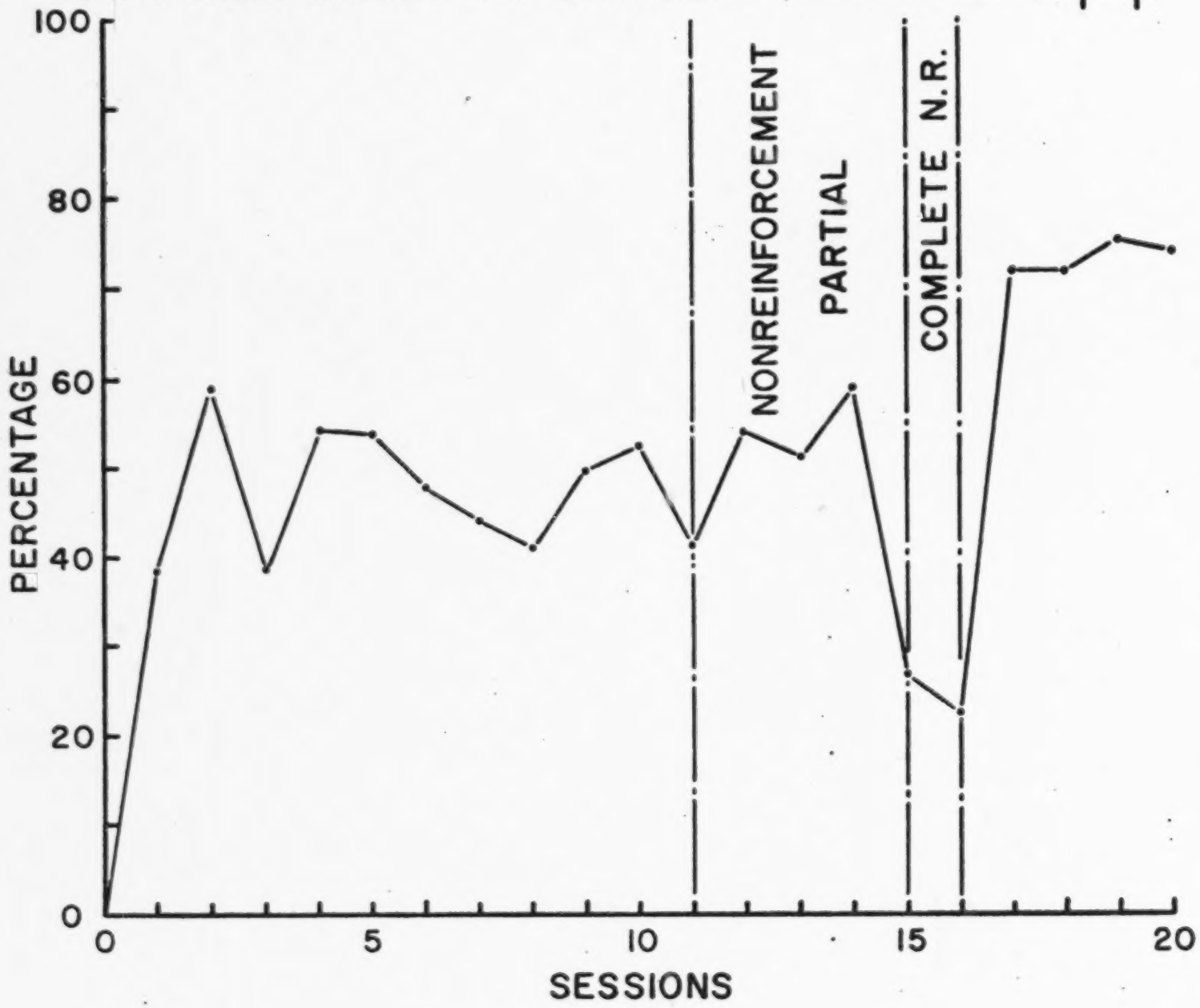
therapy for children with severe language impairment.

Although, in general, vocal/verbal behavior increased in all subjects, the increase in echoic and tacting behavior does not necessarily reflect a corresponding increase in meaningful verbal communicative behavior as evidenced in part by the minimal and limited amount of manding behavior observed.

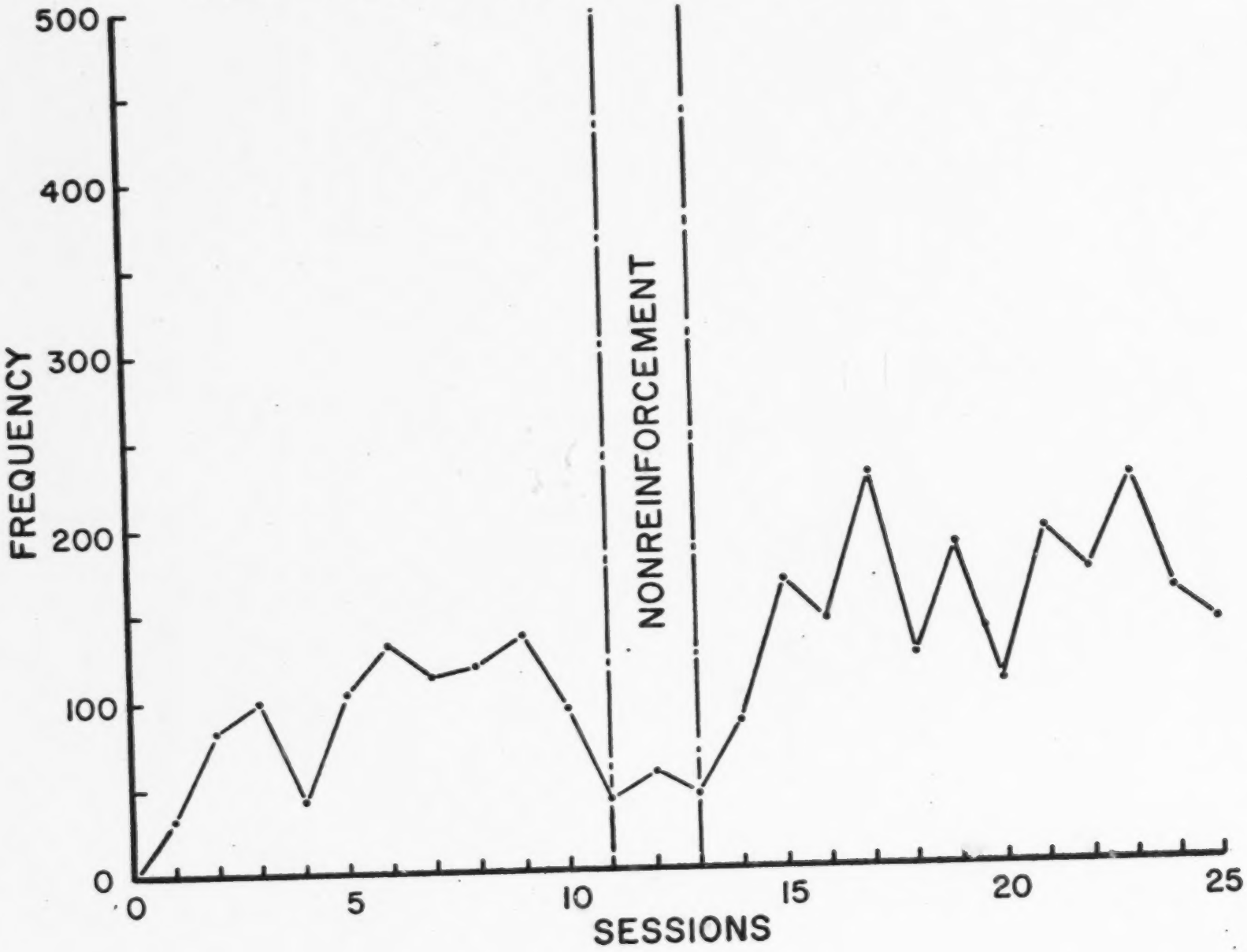
A variety of food reinforcers delivered in small portions is effective in avoiding satiation and evanescence of response. In addition, desired primary reinforcers can be determined by permitting the subject to choose those reinforcers he wishes to be delivered.

Positive reinforcement withdrawal (TO--Time Out From Reinforcement) contingent upon disruptive behavior is effective in decreasing such behavior and can lead to extinguishing disruptive behavior.

After control through operant conditioning has been established, the experimenter, as the dispenser of primary reinforcement, becomes a secondary reinforcer due to the pairing of the reinforcers with the person dispensing them. This conclusion is reflected in the observed behavior of all three subjects, who physically moved closer to the experimenter during the nonreinforcement period when food and social reinforcement were withdrawn. It was also apparent during the post-nonreinforcement period when the reinforcement schedule was changed to intermittent reinforcement yet the vocal/verbal behavior continued to increase.


%V/V RESPONSES TO STIMULI PRESENTED (S_1M_1)
PERCENTAGE
100
80
60
40
20
0
0
5
10
15
20
SESSIONS
NONREINFORCEMENT
PARTIAL
COMPLETE N.R.

SLIDE 1


NON-DISRUPTIVE VOCALIZATIONS ($S_2 M_2$)
FREQUENCY
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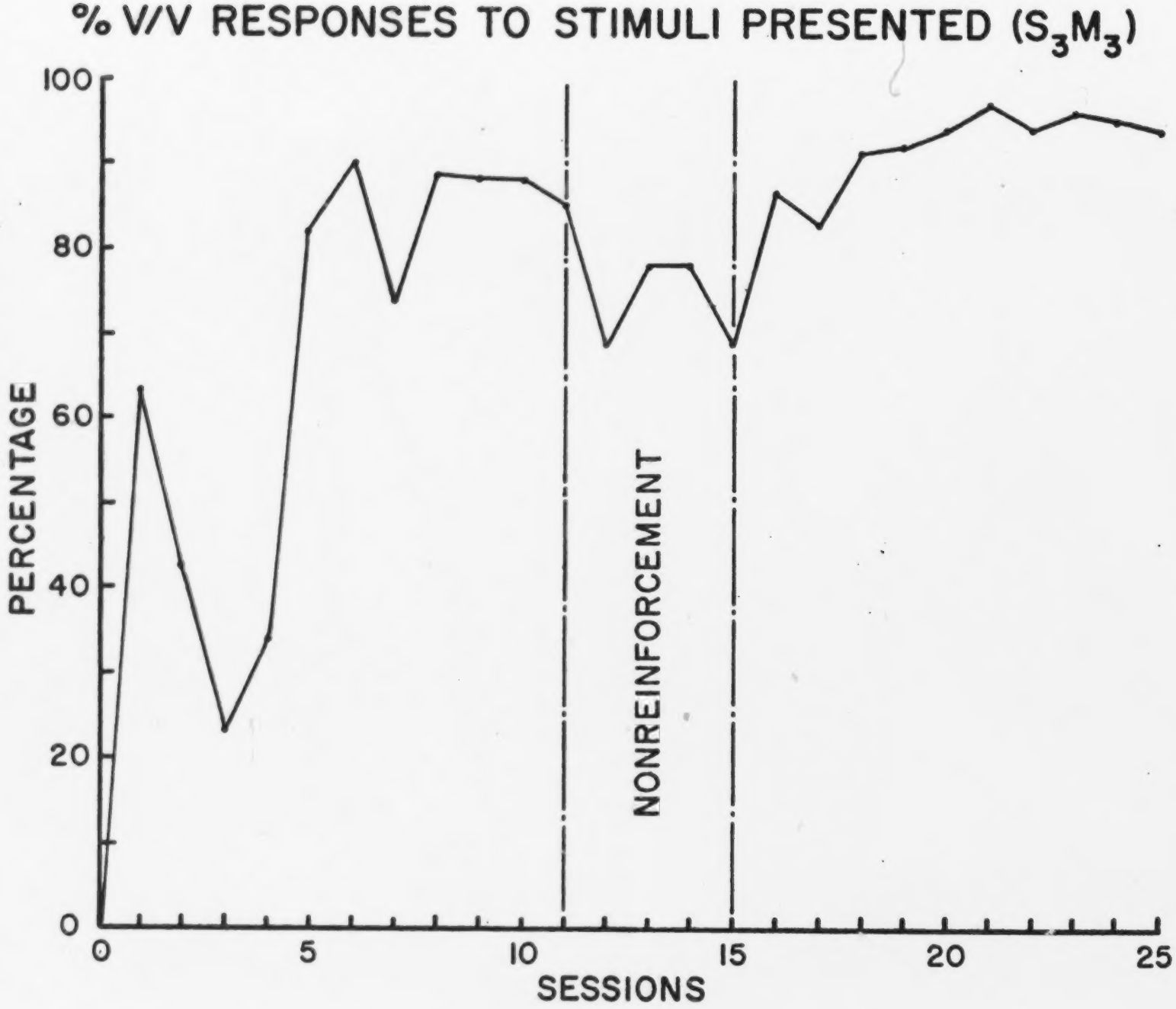
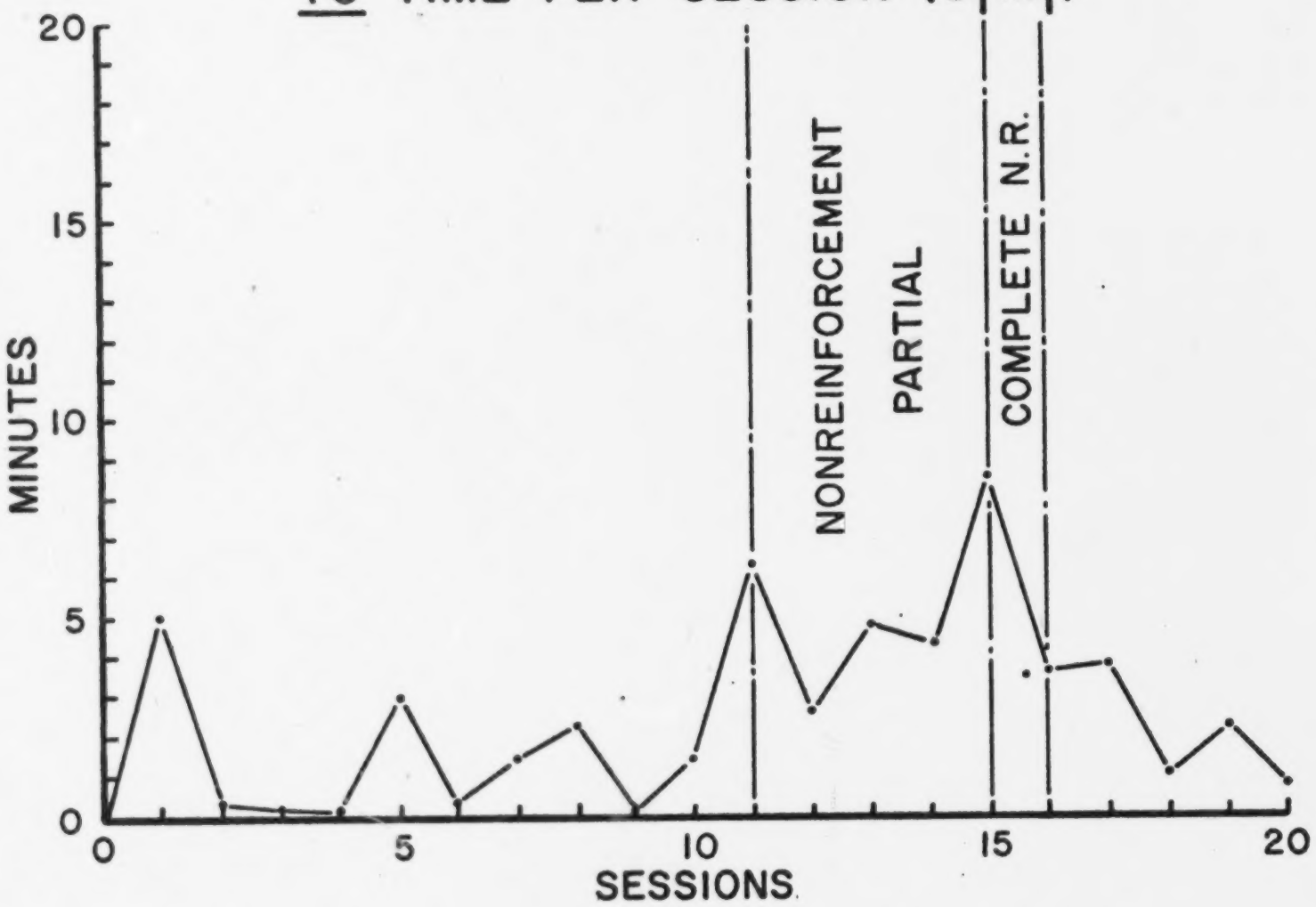
400
300
200
100
0
0
5
10
15
20
25
SESSIONS
NONREINFORCEMENT

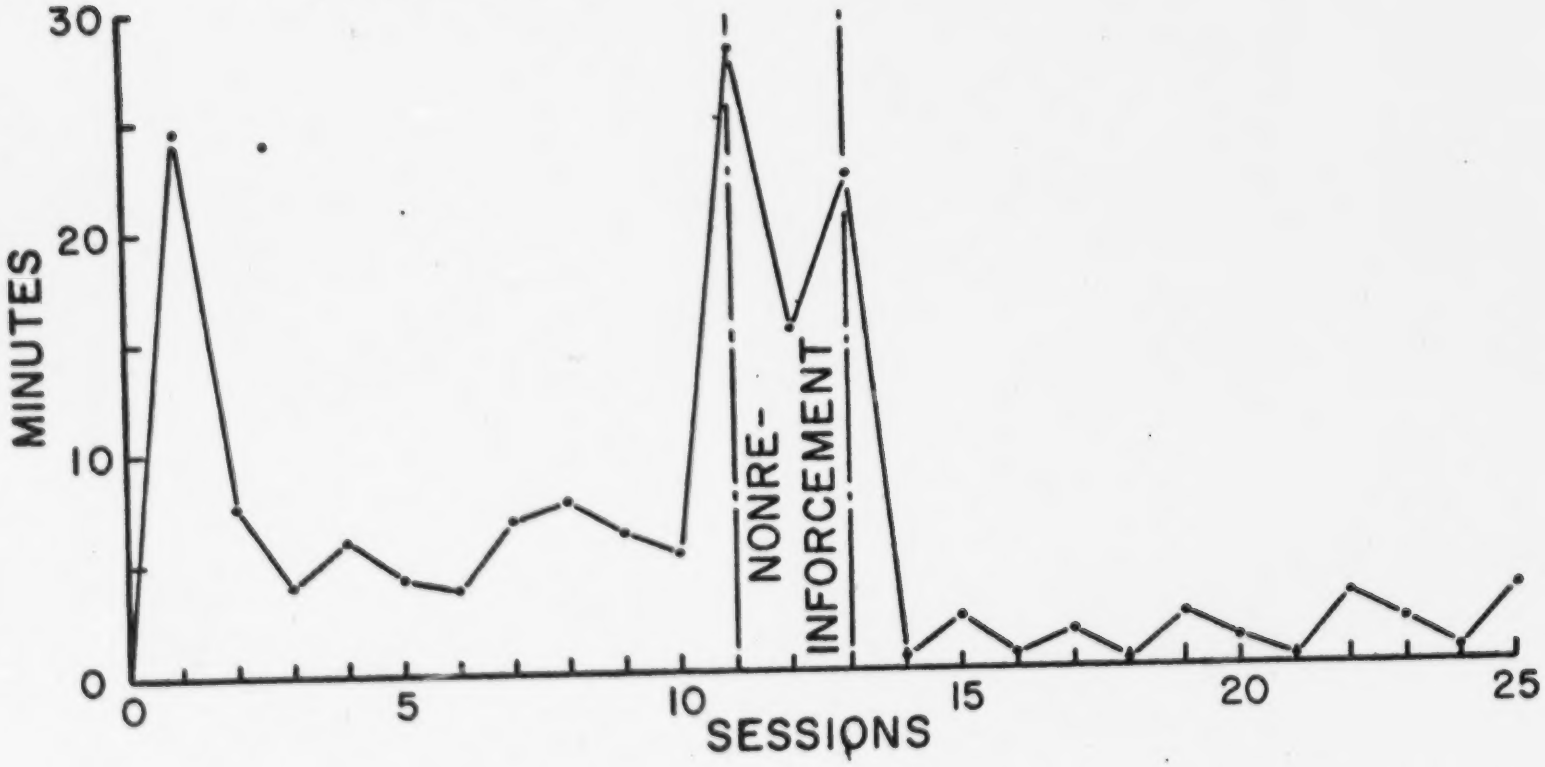
SLIDE 2


% V/V RESPONSES TO STIMULI PRESENTED (S_3M_3)
PERCENTAGE
100
80
60
40
20
0
0
5
10
15
20
25
SESSIONS
NONREINFORCEMENT

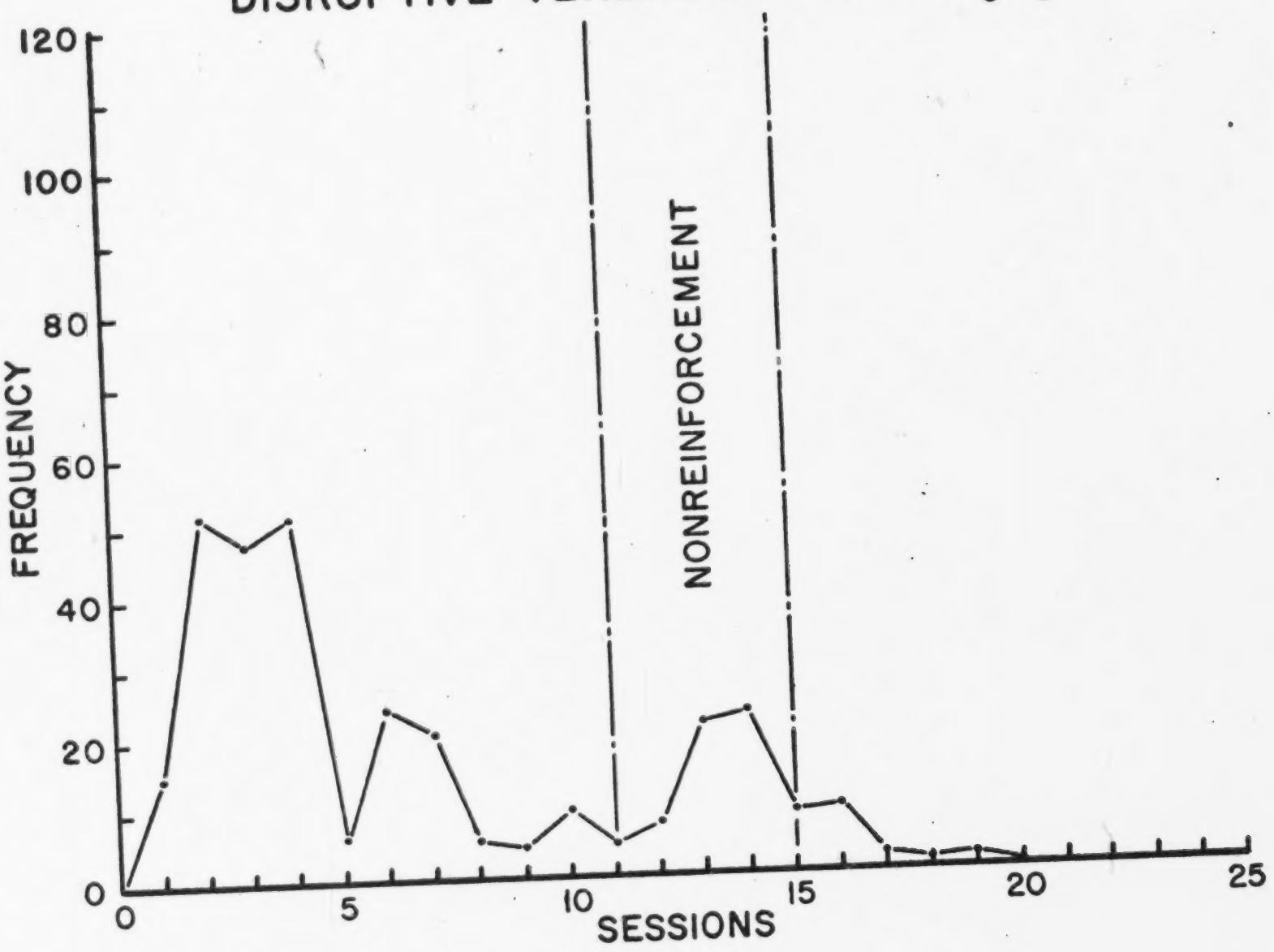
SLIDE 3


TO TIME PER SESSION (S, M,)
MINUTES
20
15
10
5
0
0
5
10
15
20
SESSIONS
NONREINFORCEMENT
PARTIAL
COMPLETE N.R.

SLIDE 4


DISRUPTIVE VOCALIZATIONS (S_2M_2)
MINUTES
30
20
10
0
0
5
10
15
20
25
SESSIONS
NONRE-
INFORCEMENT

SLIDE 5


DISRUPTIVE VERBALIZATIONS (S_3M_3)
FREQUENCY
120
100
80
60
40
20
0
0
5
10
15
20
25
SESSIONS
NONREINFORCEMENT

SLIDE 6

Parents of Deaf-Blind Children

Elizabeth Banta
Perkins School for the Blind, Watertown, Massachusetts

I have been invited to speak on the broad topic of "Parents of Deaf-Blind Children". What might be said which would be relevant to the interests of a general audience representing a great deal of understanding related to parents of children who are in some way exceptional - in that they deviate from the child the parent expected to produce and to rear? The answer to that question is difficult to determine. I will proceed, sharing some of what I have learned from parents of deaf-blind children with whom I have worked for the most part during the preschool period and at the time of an educational evaluation of their child. Hopefully, you can take something from it which will be of help to you as well as to the parents and children for whom you are responsible. It is my major concern, in this presentation, to again bring in a very positive sense, families and their continuing needs to the consideration of those who work with them lest families be slighted in our diligence in seeking to help the child, per se. It is to everyone's disadvantage to work with one to the exclusion of the other.

Why speak about parents of deaf-blind children? Are they different? Certainly not, in the sense that they are real individuals - with maladaptive as well as adaptive behavior patterns, with aspirations, fears, attitudes, thoughts and convictions, with different ways of communicating needs and ideas, and so forth. The advent of a child and most particularly a multi-handicapped child into their lives alters their life pattern. In fact, it plays an important part in the dynamic interchange between all of the family members. All of what they are, the severity of the child's problems, the quality of resources available to them and other reality factors determine how well they are going to be able to adapt to their circumstances not only at the time of the child's birth but as needs change throughout the preschool, school and post school years - during their entire lifetime.

It would seem, however, that there are some factors which would place them, as a group, in a unique situation. The complexity that comes with the combination of their children's disabilities comes immediately to mind. As multi-handicapped children, medical, diagnostic, child rearing, and educational or training needs become special. Recently, I heard another phrase coined in an attempt to indicate what can easily happen to children with multiple special needs. It was "the Crack and Crevice Syndrome" which I believe was meant to imply that - because it is rare that there is ever real coordination of services in such a child's behalf, because multi-handicapped children's combination of disabilities fail to be within the experience of some medical personnel who are among the first to work with such a child, because criteria for admission to educational programs must be specific to the needs of a particular group, because educational program placement according to what is determined to be the child's greatest handicaps is often inappropriate, because some children appear so complex that they overwhelm professional persons responsible for meeting needs, etc., they tend to "fall between" and are lost to responsible person's attention and therefore subsequent services to themselves and their families. This is, indeed, the most obvious related parent dilemma. It is the one which imposes the greatest amount of frustration which in turn can be seen in anger and even overt agression expressed on the part of some parents which is, then, often misunderstood and counter attacked by those closely involved.

I do not intend to negate the fact that superimposed upon that dilemma, basic personal needs of parents to find satisfaction in their child, to provide the proper environment, to teach him and aid him in his development are altered greatly in gratification. Because of his peculiar combination of disabilities he presents varied and unique problems, for which the parent has no model nor prior experience to draw upon. How do you answer, for instance, for yourself and others who will ask "will he ever speak?", "if so, how will he learn to do so", or what will he be able to do in "the future?"

Lest what I say in the content of this paper leads anyone to the assumption that I believe that the birth and subsequent problems of a multi-handicapped child will inevitably result in disruptive, maladaptive or pathological reactions on the part of parents, let me emphasize that many parents succeed in coping with the crises in a healthy, constructive fashion. However, many parents are unable to face reality and to deal with the problems facing them in a constructive way without the help of sensitive, understanding, responsible adults around them. There is much currently written about the importance of appropriate professional intervention and support as early as possible in crises situations. It is thought that appropriate intervention during periods of stress can often facilitate not only significant but long lasting changes in the level of adequacy of persons. Since parents are our best and most important resource, it would seem that thoughts toward improving the quality and quantity of parent services should receive some priority attention on the part of us all. This might take a variety of forms from giving factual information and recommending resources to giving emotional support to parents in stress. All parents need information, some need supportive counselling and beyond that range, some will need to be referred for personal therapy.

No matter what our capacity - teacher, administrator, counsellor or friend - we all can have a contribution to make to families of, in this case, the multi-handicapped child. Obviously, we can read and learn from each other but one of the most meaningful ways to learn what is needed is to carefully listen to what parents have to say. Few of us are good listeners but we can learn to be.

It is important to look behind what parents say because they may intend to be honest but defense mechanisms cover their unconscious thoughts and motivations. For instance, if one were to examine carefully a very specific example such as the reasons behind referrals for educational evaluations, one could easily see what is meant by this statement as the expressions of need become more and more personalized.

In correspondence prior to the evaluations of the children, statements regarding reasons for referral varied but for the most part were either general requests for

"further evaluation and recommendations for placement" or for enrollment into our school. To be more specific, represented in the former request were:

- children who either came from New England or who fell under other Regional Centers for the Deaf-Blind where Coordinators are attempting to define the needs and disabilities in the population for whom they are responsible.
- children already placed in programs but where that agency was desirous of an assessment of the child's potential and recommendations for appropriate training or educational programing.
- children living at home and not attending a program but whose parents were seeking practical suggestions for child care.
- children who have had prior educational evaluations but whose parents and/or involved agencies were seeking confirmation of that diagnosis.
- children whose major disability is mental retardation and his disability is clear to the professionals but they wish to pass on the responsibility of interpretation to the parents to someone else under the guise of not being able to trust their own results because of "lack of knowledge of the effect of sensory deprivation".
- children who were already placed in programs but where there was dissatisfaction on the part of the parents and/or that agency regarding the appropriateness of the placement and where they were seeking suggestions for other reasonable placement possibilities.

If you then look even further into the situation, during the evaluation week proper, the parents and accompanying workers break down these more general reasons as they express additional, more specific, and more personalized reasons behind the referrals.

They include:

- stress from within or without the family unit which resulted in an episode or crisis of varying degrees of severity and which precipitated

the expression of that families' need for assistance of different types, including for their multi-handicapped child.

For example:

- birth of another child, especially if the family was already large, where outside support was not readily available, where this child also was defective or expired, or where there were several children born in rapid sequence.
- strong desire on the part of young parents to consider having more children, and to assume what they feel is a more normal life style - placing their handicapped child away from home but appropriately placed, of course.
- marital difficulties ranging from strife to separation and divorce effecting the emotional, social, and financial state of the family.
- loss of a spouse through death - or the prospect or actual accomplishment of legally claiming another one.
- illness, mental or physical, on the part of other members of the family.
- interference and lack of understanding and support on the part of members of the greater family and/or community over an extended period.
- demands and needs of siblings, ranging from learning to live with a handicapped sibling to sibling rivalry of varying degrees of intensity to one sad case of attempted suicide.
- social isolation, exhaustion or frustration resulting from actual or self-imposed family demands.

There were instances where the family was in a state of disequalibrium such as:

- fathers were absent because they worked away from home, worked conflicting hours, or where they lacked the emotional stability or maturity to accept home responsibilities, leaving mothers with a heavy load.

- where the mothers became over extended in meeting needs of normal siblings as well as running taxi service and actually participating in a school program attended by the handicapped child.
- where a parent imposed upon herself more than was necessary in the case of the handicapped child under an assumed martyr role or where she over compensated by becoming overly involved in work on behalf of the "cause" of the child while neglecting his direct care.
- where the child was so handicapped and behavior such as sleeping problems and hyperactivity were so difficult that mothering demands were too great in a home environment. This kind of a situation also exists when the child's needs remain infant needs for extended periods of time.
- where knowledge of child rearing, home management and coping in general were not sufficient to allow the parent to be effective. It is especially difficult in our mobile, small, independent family unit society to know how to rear a normal child let alone a multi-handicapped child. Wisdom of the greater family and lack of precident make trying insecure.

Finally, examples of stress other than that of isolation, inexperience and family needs include:

- financial difficulties, the cause being unemployment or some such reason not directly related to the handicapped child, or because of the need for expenditures for medical care, prosthesis, hiring outside assistance in child management, or supporting custodial, training or educational placements - all of which repeatedly exceeded the limits of the family income.
- cumulative guilt over "why this happened to me" (especially if there was a peculiar family history) or concern over the lack of ability to mother

a defective child or worry over whether or not they were "right" in placing their child in an institution at an early age even if it was not self but professional advice initiated - sometimes reached a point when parents were compeled to seek out further professional counsel.

- a cumulation of many family problems which were for some reason overlooked so that the cause for them all was focused upon the handicapped child to the point that there was so little tolerance for him that placement outside the home was viewed as essential.

This list of precipitating factors are often in combination and could go on but there is much else to be considered.

It need not be a crisis which causes parents to request evaluation for their child. Many of the children we have seen have been at beginning school age. Parents have fulfilled their role during the expected preschool period and are seeking program in much the same way they would seek out a good school for their kindergarten age child except that they need professional help in assessing potential and understanding the type of program to seek. Placement was sometimes viewed as inevitable and sometimes with real urgency to turn over some of the responsibility for the child's learning to someone else.

Often, we find that parents have coped through their own good sense with minimal professional help and are not necessarily terribly uncomfortable with their situation but are at the point of needing a professional opinion of the child's placement needs in order to push authorities to provide for their child a future program which is currently non-existent. Agencies for multi-handicapped or retarded children, among others, are often open to trying to provide services for preschool children. Many children referred have benefitted from such services but the agencies are currently advising parents that theirs is not really the appropriate facility or the maximum age limit is about to be reached and are gently pressuring parents to seek placement elsewhere. Often their workers accompany the parents for the evaluation and interest

in those children has been high. However, it cannot be assumed that they have, in fact, been helpful to the child more especially in attempting to solve some of the difficulties in the parent-child relationship.

Certainly, this account of some of the reasons behind referrals is incomplete and is also superficial if a counsellor were to be seeking what he might consider the deeper significant factors for the purpose of greater understanding of parent needs and for planning therapy for them. However, my point in all of this is to say that we can all learn to listen better and by the very act of our concern be helpful; we will also have gained insight which might be useful in planning appropriate services or in acting in whatever capacity our role allows us, in the family's behalf.

Since I have already moved into the area of needs verbally expressed during the week that parents spend with us while their child is being educationally evaluated, perhaps it would be of interest to some of you for me to share concerns expressed beyond those specifically listed under reasons behind the referrals.

Let me first explain that during the week that the parents spend while their child is being evaluated, time is allowed for observations and scheduled appointments as well as for informal conversations with members of the staff.

Not unlike other evaluation centers, among our several intentions, we wish to obtain from the parents all that they can recall regarding the various aspects of their child's growth and development and to clarify history - family, medical, social and educational so that pertinent information can become a part of our impression of that multi-handicapped child in his family as we work toward our final assessment and subsequent recommendations. As the week progresses, parents verbally express many concerns which lend themselves to parent education and counselling. Concerns most frequently encountered have been focused on the question, "how can I be more competent in my role as parent of a multi-handicapped child?"

Parents are especially interested in advice concerning:

1) teaching self-help skills, especially feeding, walking and toileting,

although sleep, washing and dressing are often trouble areas. To look behind the surface of this question a few common findings must be remembered.

1. developmental milestones in this referral population have frequently been delayed; normal child rearing practices and expectations have often not proven to be successful; yet parents feel that these skills are for parents not teachers to teach; they focus their guilt, then, not on the cause of the handicapping, but on themselves. Because of their feelings of inadequancy in child rearing, their query often means "am I the primary cause for his lower level of performance in these areas?"
2. acquiring knowledge to help him to use the hearing and vision he has. This not only includes training implications but concern about where and when to receive adequate medical care, how to use aids and to interpret the child's response or lack of it.
3. finding better ways to communicate with him. Very often parents have been trying very long and hard without much if any response from their child and without sufficient understanding of either his problem or what to do about it.
4. finding materials or ways to help the child become more interested in his environment through play.
5. finding ways to set limits and maintain a consistent routine. (This is especially important to the parent of the child who has peculiar neurological problems which cause him to behave in such a way that he does not respond to normal disciplining techniques).
6. discovering how to explain the handicapped child's disability to the siblings, grandparents and other involved persons at the same time they are coping with their own feelings regarding being a parent of

a multi-handicapped child. There may be anger because of the imposition and with no one to blame, disappointment which re-occurs as milestones are delayed, the overwhelming realization of the years of committment to a child so dependent (beyond what a parent expects), anxiety over not only the child and his future but their feelings of ambivalence and again their insecurity about their own ability to rear the child.

7. finding ways to divide time and energy so that total family needs are considered and coped with and so that the family life style remains as unaltered as it can be is often a dilemma.
8. understanding the disability. Loss of vision is the easiest to understand. Hearing loss, neurological dysfunction and mental retardation require a great deal of explanation. To sort out the effects of each disability on the child, let alone the combined effect, is overwhelming. Besides, they are often already confused because of prior conflicting opinions they have received. Lack of confidence in professionals and the vast gap in their own knowledge leaves them in a dilemma which ~~provides~~ PRODUCES anger and makes decision making difficult. We find some parents who would still like to find someone who could advise them of where to go to have the defects completed corrected(for example, "wish to fix it and make him normal".)
9. finding financial assistance, appropriate medical care, and appropriate educational programs. (There is a need to explain the difference in programs goals which are set up to meet the needs of children within different levels of educability.)
10. "making programs happen" if they do not currently exist.
11. feeling comfortable with their choice of placement for their child. This is a question that parents of children needing residential

placement nearly always request time to discuss.

12. seeking appropriate professional guidance and counseling in family or personal problems, for example, genetic, psychiatric, medical.

13. starting or becoming a member of a Parent Group (association) or at least initiating correspondence with another parents.

As has been obvious to you, I have been dwelling on needs representing for the most part parents of preschool congenitally assaulted deaf blind children since they are most frequently our current referrals for evaluation.

Some of those needs that were just itemized were gleaned from the initial period of disclosure after which parents want and need an honest statement of the diagnosis, an explanation of its implications, an opportunity to ask questions and to begin to make plans for the future.

Parents have found the process, itself, of evaluating their child of value to them. We can learn some things from parents' statements about the way they like to be encountered and about the opportunities for learning and growth the week provided.

Some of the many points they mentioned were:

- an opportunity to be away from all other direct responsibilities and to concentrate on their handicapped child. For many, it was their first chance to spend that kind of time and they discovered many things about him for themselves as they, in turn, thought about management, sensory loss, his primary problem, the ability to communicate, his present growth and development and thoughts about his future.

- an opportunity to become acquainted with other parents of multi-handicapped children, to live in the same cottage and to share not only the weeks' evaluation experience but many feelings, ideas and experiences as well.

- to receive a full orientation of what to expect through informal "talk" sessions.

- perhaps for the first time, to observe other deaf-blind children and to receive explanations regarding their disabilities, their program needs and

their potential. By observing other children in the diagnostic classroom, in the local nursery school for deaf-blind and in the Deaf-Blind Department itself, they were better able to see their own child, in perspective and to understand program needs.

- the advantage of spending an entire week so that the children have a chance to adjust and so that it is felt that the evaluating personnel have in fact, observed his "normal behavior" if not some of his better performances. They are careful to watch staff at work and appreciate expertise, conscientious observation, the care with which children are handled and the "realness" of staff. If they feel that a staff has cared and has "really looked" they are more ready to listen and to trust what is said in conclusion.

- the freedom to be involved in the total process and to observe as we do, to receive explanations of what is being done as it happens (in essence, learning via live demonstrations), to have personnel open to their comments and welcoming their questions, displaying at the same time frankness and honesty and a genuinely caring attitude - keeping in mind the importance of dialogue in language everyone can understand.

- to receive a full report, according to our understanding of their children, with no information withheld and to have an opportunity to ask questions until that information is clarified. This is according to the belief that parents have the right to know and can understand! They also appreciate an expression of general expectations for growth and future needs because they need this kind of gross prediction in order to plan. To know that future contact with us can be direct and is easily available, that interest will be continued and that reports will be available is also important to them.

- to have the advantage of a local worker experience the week with them, to become even more involved (in most cases) and to assist them when they return home.

- to be presented with a summary and recommendations at the end of the week but to be left with possibilities to consider, under the assumption that they have the right, the capability and the responsibility to make their own decisions.

- to feel as a parent that you have been thorough in your search, that you understand the problem and have confidence in the recommendations made.

- the advantage of having a center coordinate available information regarding their situation via reviewing medical history and having a medical consultant's recommendations as well as obtaining information from prior educational programs, from the parents and from their own observations regarding the child's total performance in order to finally describe to his parents their impression of the child - his disability, his potential, and his placement, medical and management needs. For many parents, their only prior experiences have been bewildering, inefficient, inadequate and most certainly fractured medical care with no attempt on anyone's part to think about the child's total needs. This was especially true of parents from the lower social-economic groups who could not afford to be private patients but had received care primarily via clinics.

- an opportunity for emotional catharsis but with the focus toward their child. It is important that they be heard until they can no longer think of additional pertinent information and that their thought be requested, respected and used.

(Note that Dr. Fernandez reporting at the San Francisco Conference stated that "In all situations, the scoring of data obtained on interview has been statiscally compared with data obtained on observations and has been found to be in significant agreement.")

- an opportunity to receive counselling which does not work toward an end of full acceptance of their disabled child." Perhaps there is no such thing as full acceptance. Why should there be? To convince ourselves of it as counselors only encourages in the parent suppression of real but incompatible feelings which must exist.

It is important that professionals recognize that it is indeed difficult to be responsible for the complex multi-handicapped child in such a concentrated way as these parents must be, to help them to recognize that some of the child's problems have a physical base so that they can find some relief from lack of success in particular areas of child rearing, and yet to provide practical information which is appropriate to what they have found his level of functioning to be and which would be helpful to his parents and teachers alike.

Parents need help in learning to live with their handicapped child in the present as well as to know where to turn for professional help as needs change.

I have spent perhaps too great an amount of time on the period in which a child is educationally evaluated. This is often the error in reality also. Many children are "evaluated to death". Diagnosis is often viewed as the end of the professional contact when, indeed, it is but the beginning of extended professional responsibility./ For many children this is the initial period of contact - by the educator. Early identification has its own complicated history. Beyond the initial diagnostic period then, many parents, according to their own statement, need continued help in working through their feelings,

in management of every day problems and difficulties ~~for~~ in a reasonably satisfactory degree, and in ~~many~~ making long range plans for the child's future. This on-going professional contact should last indefinitely and may not be with the same person(s) who presented the diagnosis. Needs will be continually changing as the child grows and time passes. Provision needs to be made for this!

Not to belabor the infinite needs surrounding families of deaf-blind children of that particular age group but to move away from the educational evaluation situation to consider needs of the deaf-blind and their families as the years progress, let me comment first on pre-school education programs. Many new programs have sprung up during the past few years to meet the increased demand for services presented by the Rubella epedemic and improved medical techniques which "save more babies" than even before. They seem to vary in purpose from day care, to training a specific skill, to normal nursery school arrangements, to specially tailored individualized programs. Since research does not support the idea that pre-school programs contribute significantly to changes in the normal child in spite of what we might all "feel" is true, and in light of the fact that it is known that the parents have the greatest influence on the growth and development of the young child, it would seem that no pre-school program would exist without effort to involve parents as fully as possible. During those years, they could be assisted via regularly scheduled parent group sessions and individual counselling sessions and with even their own involvement in the teaching situation, ALL OF THIS structured to lend a great deal of support. The objectives would be to increase their adjustment to and understanding of their handicapped child, to become even more appropriate in child care and to become more realistic in plans for future educational placement. Hence, an ideal setting for assistance to parents through the stage following the diagnosis itself ~~-~~ the fact that he is in a program so that responsibility for change in him is shared, that others are familiar with and concerned for the child so

that thoughts and feelings can be easily discussed, that the isolation is reduced by contact with other families of similarily damaged children, [redacted] often contribute to coping with reality and the reduction of anxiety in the entire family.

Many of the needs felt and expressed by parents are ones that run throughout their lifetime. There are a few that are conspicious among the families of the school aged child. (I am speaking now of the educable deaf-blind child since they are the children with whom I have experience).

For instance, whether the child is placed in a residential situation or a day program, the parent has many concerns prior to entrance into that program. The parents involvement has been great so far. Now, they will no longer carry in the lion's share of his experiences, be the authority on how to cope with his behaviour or help him learn, be the most important person in his life etc. They must adapt to this - as well as to their own lives in the child's absence. The transition needs to be facilitated. All programs suffer the same major problem and that is how to cope with increased psychological distance between parent and child, not to mention parent and staff during the entire period the child's education is in process.

If, in fact, the child returns home for evenings, weekends, vacations, or forever (once his school age years are over), continued meaningful involvement is a must through every possible means! We need to remember that the children are, first, the children of their parents and the problem of respecting the rights of, the feeling of and the knowledge of parents as well as help them to cope appropriately with their total family responsibility [redacted] at this time is difficult to meet satisfactorily.

However, the school has the responsibility to facilitate that consistent involvement via the individual efforts of the teachers and through support of other members of the staff so that parents can meet other parents, confer with members of the professional staff and visit often and at length. Services can be offered to teachers in

their efforts with parents via appropriately prepared consultants who can aid the teachers in interpreting parent behaviour and teacher-parent communication breakdowns.

One mother wrote that to be kept involved was not only her right but "beyond that, it was her basic need." Information should continue to be given in the same open, frank way. Reports on learning and classroom behaviour are important. However, it is also essential not to overlook the sharing through dialogue of what they are missing of the child's daily living experience (especially if the child has a major communication problem).

To have given an early projection related to the general prognosis of a child is important to the parent. To begin to think and plan at an early stage, after he has grown and developed and more specifics are known about him, for his future possibilities after school is also essential.

There is little written by parents of deaf-blind children expressing their own needs related to children either approaching the end of their school age years or already of such an age. Before I close, however, I would like to share with you some thoughts from a paper presented at a conference in England this spring by Mrs. Brock, a parent of an older deaf-blind child and a member of the Rubella Parents Assoc. there. (Of course, she is representing the English situation but perhaps some of the needs and thoughts expressed should bear consideration by us all). She made about 25 home visits and recorded her own thoughts as well as those of families interviewed. We would need to concur with her that in this country it is increasingly more acceptable to make an investment in the child who has not reached his potential. However, she points out that there is the long term dependence to consider; that many parents have for long periods of time tried to cope with providing security, experience and improving the child's personal independence but they are not super human - they become weary; that there is often a

resurge of guilt in that the child before them represents the limitations he will always have and with which they must cope in some way - either at home or in selecting ~~in~~ an institutional placement; that again in this age group there are individuals who become lost to any services especially if they can't be served under vocational rehabilitation; that the fact that the handicapped person is adult age much longer than they are children can't be overlooked and that in spite of tremendous expenditures for children, funds and programs are minimal for these same individuals after the age of approximately 18. She points out that there is a need for someone to assume responsibility for bringing to the parent's attention some of the following:

- the availability of trusteeship schemes where personal welfare services are offered when parents can no longer do so.
- the need to appoint someone, preferably not the siblings, legally responsible for the deaf-blind child in their will.
- the caution not to imperil the single lives or marriage of siblings through responsibility for the handicapped child.
- the need to be informed of social security, welfare service, disability regulations, insurance schemes, etc. that might be of assistance.
- the need to find neighbors of relatives to share the load and to ward off family isolation.
- the need to try to provide for constructive leisure time activities for the handicapped person. There was a worry over the loneliness which comes, especially with communication problems.
- the need to seek out and support the idea of "hostel life" which would allow for relief for parents as well as gradual transition from home to a, then, partially familiar living situation.

- the need to find varied and more appropriate work possibilities.

May I quote from her concluding paragraph: "Soon there will be many more families facing the problem of living the "different" life that the possession of a handicapped adult imposes, and we must try to blunder on toward a better pattern to offer them so that together we can offer a more positive contribution and not only just about keep up".

Time doesn't permit exploration of some other vital issues.

In conclusion, I would like to say that it is good that we have services such as offered, for instance, by the Industrial Home for the Blind and that I am encouraged by the idea of Regional Centers and the plan to consider needs of all deaf-blind persons and hopefully their families from birth throughout life, so that this blundering Mrs. Brock referred to can eventually be minimized and we become more effective, in fact. It is certainly a challenge to us all.

A Preventive Approach to Speech and Language Delay Among a High-Risk Population

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One of the basic criteria of a community level Speech and Hearing Clinic is to be sensitive to and react to the needs of the community as they relate to its' professional services. In most communities there are segments of the population in which one may expect a higher incidence of communication disorders. These may be called "high-risk" populations. They include the aged, the emotionally disturbed, the multiply handicapped the mentally retarded, and the socio-economically deprived. In many instances these populations are so large that their need for speech and hearing services cannot efficiently met by the existing number of speech and hearing professionals, once their problems reach the magnitude of a disorder. Often, however, it is more feasible to initiate preventive programs administrated and supervised by speech and hearing professionals but carried on by professionals and para-professionals from other disciplines. In this way it is possible for a relatively small speech and hearing clinic to extend its' services beyond its' doors to respond to the needs of the community.

The population be be described consists of 250 socio-economically deprived preschool children in six Child Development Centers in Hillsborough County. The children ranged in age from 3 years to 5 years.

Thereexists a need for preventive and early intervention programs for these children whose environment had been identified with a high incidence of communication disorders....particularly speech and language delay. Speech and Language delay has frequently been defined as articulation, vocabulary, sentence structure, and speech output that deviate from normal standards. Frequently, speech and language delayed children cannot participate effectively in routine classroom activities.

Research in the 1960's with children from low socio-economic families indicated a high estimated incidence of linguistic deprivation amoung children from low socio-economic families. Language deficits dominated the long list of characteristics of

this population. Cohler in 1960 and Hirsch in 1967 found that these language deficits limited the ability of these children to think, to learn, and to succeed in an educational setting. Davis in 1964 estimated that by two years of age, the children from a socially deprived environment were already inferior in verbal skills compared with their middle-class counterparts. Further, he found that after the primary grades, the socially deprived child's verbal skills increased at a significantly slower rate than their middle-class counterparts.

Loban in 1963 found that the socially deprived child tended to use smaller communication units....and used them less frequently..., used more partial expressions, exhibited inadequate language structure, and had a significantly smaller receptive and expressive vocabulary.

Speech ia an important characteristic of and relates to the ongoingness of society. Through it we express our thoughts and feelings, seek and receive cooperation from cpmpanions, adjust differences and incoasistencies in purpose and viewpoint, and bring our social environment under control. Listeners often tend to evaluate us on the basis of our speech and language patterns. Patterns of speech which are inefficient in accomplishing our communicative objectives often serve only to hamper the mobility of the individual in the society. Wittick in 1967 pointed out that the speech patterns (especially articulation patterns) of socially deprived children appeared to indicate that most have difficulty in this area.

The growing body of literature on language development amoung the socio-ecomonically deprived appears to suggest a significant relationship between language delay due to envirinmental deprivation andvarious communication and intellectual skills. Deutsch in 1962 found a significant relationship between low language abilities and low cognitive skills. Hebb in 1949 and more recently, Hunt in 1961 found a significant relationship between low level language skills and impaired intellectual development. In 1967 Hirsch found a significant relationship between low level language skills and impaired problem-solving abilities. John in 1963, Deusch, Brown, and

Cherry in 1964 found some evidence to support the hypothesis that the non-functional language system utilized by socio-economically deprived children may be a factor in the alienation of the school and the individual.

In January of 1969, the Speech and Hearing Division of MacDonald Training Center, in cooperation with the Neighborhood Service Center Child Development Center, Component of the Hillsborough County Hospital and Welfare Board, initiated a program which would provide speech and hearing services to approximately 250 socio-economically deprived preschool children. These children were enrolled in six Child Development Centers located throughout Hillsborough County. The first phase of the program included the speech, language, and hearing screening of all children enrolled in the Day Care Centers. Two speech pathologists from the staff of the Speech and Hearing Division of MacDonald Training Center administered the screenings. One staff member at each Day Care Center was trained to assist in the hearing screening by conducting small group response-shaping sessions with the children. This initial use of Day Care staff as supportive personnel worked remarkably well and greatly facilitated the screening.

The screening procedure was broken into three parts: speech, hearing and language. The materials comprising the speech screening consisted of three boxes of articles which were used to elicit speech responses from the child. The boxes were divided according to chronological age. For example, there was a box for three year olds, a box for four year olds, and a box for five year olds. The articles in box #1 were objects whose names began with the sound which was to be elicited in the initial, medial or final position of the word. For example, in the box for the three year olds was a small toy boat. The child was initially given the directions that he would be shown articles and his task was to not only identify the object but to tell the examiner as much as he could about the object. Demonstration items were used to clarify the directions. The boxes for the three year olds and four year olds contained items which elicited speech sounds in the various positions grouped according to where that sound fell on the developmental continuum. The criteria for choosing these items was according to Van Riper's

Description

Description of the Development of Speech Sounds. If the child misarticulated the sound , he failed that item for the speech portion and a phonetic transcription was made of the word as he spoke it. The phonetic transcriptions of the misarticulated words were necessary in that before judging the speech portion of the exam the entire population of that center was sampled to determine if the misarticulated word was due to dialect rather than to defect If a proportionate number ofthe children missed the item and the phonetic transcription was similar, the word was classified as "dialectical" rather than defective. This transcription would also be of great use in determining of cultural patterns of speech for this population.

The actual screening prodedure was accomplished by moving each child through the three stations. The first station the child entered was the hearing conditioning station. At this station a teacher or aide who had been previously trained in the use of the audiometer and screening procedures, grouped six children together. At this time the children were told that they were about to play a sound game (a game such as"toot and whistles', pretend we are piolets', etc.). The ear phones from the audiometer were laid upon the table in front of the children. They were then asked as a group to raise their hands whenever they heard a sound which had been previously demonstrated to them. The sounds were presented at the frequencies 500 through 4000 Hz at 100 dB. This procedure was repeated until all children raised their hands appropiately. The next step was then to ask each child in turn to raise his havd when he or she heard the sound. More time was spent with children who did not respond appropriately in a consistant manner. Once all the children had been given their turn at individually raising their hands when the sound was presented, the ear phones were then placed upon each child and he was given an apportunity to respond to the tone (generally presented at about 50dB to 60dB in intensity).

From the hearing conditioning station each child was then routed to the hearing testing station. At this station another teacher who had been also trained in the use of the audiometer and in the screening, under the close supervision of the Speech Pathology Consultant, would continue the actual screening process. The children were screened

through the frequencies 500 to 4000Hz binaurally via air conduction at 20 to 25 dB. The tone was presented three times at each frequency. If any child failed to perform the alloted task less than this three times he was failed forthat frequency and a notation was made that he be administered a recheck in the clinic sound room. A list of the children that failed the screening.was made and following the entire screening these children were brought to the clinic where they were administered another screening in the sound room.

From the hearing screening station the child proceded to the speech and language station. It is here that he is administered both the speech and language screening. These two screening procedures were administered simultaneously in the following manner. After having been giving the directi ons and the sample items the child responded to the items presented to him. A notarion was made whether the misarticulated or misnamed. After having named the item, the child was required to tell the examiner as much as he could about the item or about anything that he wished to talk about. A mean lenght of Response was computed based upon thirty or more responses. It should be noted that the procedure for computing an MLR as described by John Darley and Spriestersbach calls for a 50 response sample/ However, due to the nimbers of children that were to be screened it was felt that the time required to administer the procedure to the true criteria would utilize too much time. It was felt that this minimum of 30 responses would be sufficient for screening purposes. Insofar as was possible a transcribtion of the childs actual response was made at the time of the screening, the whole response was recorded in the hopes that at a later time a language analysis could be made based upon the responses at thetime of the screening. It was felt that in view of the fact that the Mean Length of Response was in fact not a true measure of each childs verbal skills but rather a broad index to the childs' abilities that this language analysis would be necessary for the proper placement of the child in an appropriate program. Included in the language analysis would be measures of verbal output.

During the speech and language evaluation it was noted whether the child appeared to be experiencing any difficulty in the areas of voice, or stuttering, as well as any physical abnormalities that were exhibited, such as deviantoral structures or difficulty

in mobility of the muscles of articulation, etc. A VALSH (Voice, Articulation, Language, Speech, Hearing) graph was filled out on which the childs' language, speech and hearing abilities were visually presented. The VALSH was divided according to severity on a scale of from 1 to 3. A notation in the #1 category indicated that the child passed the screening for that particular area, suchas voice, articulation, etc. A notation of #2 indicated a possible problem. These children were scheduled for a rescreening of the area in which the notation was made. A notation of 3 indicated a definate problem in the noted area and the child was scheduled for a more extensive evaluation in this area.

Recommendations for referral were basically of two types, extra-program referrals and intra-program referrals. The extra-program referrals were made in instances where it was felt that the child would benefit from referral to a physician, dentist, psychologist, an otolaryngologist, etc. For example, one child was immediately referred for an otolaryngological exam when the examiner was told that five months previous to the screening that one girl had placed a marble in her ear canal. The marble had not been retrieved over these months. For this reason the child was immediately referred to an otolaryngologist and the foreign body was retrieved. There were also instances where children who failed the hearing screeningand the hearing screening recheck were found to have chronic bouts of otitis media and were thus referred to a local otolaryngologist for followup.

Intra-program referrals were those referrals which recommended placement into one of the three groups. These recommendations were made in each case on the basis of how each child compared with the total peer group (re. standard deviation computed on the basis of individual raw scores over the center population). Those children who fell one standard deviation or above the Mean for the total population were placed in group A. Those children who fell one standard deviation above and below the Mean were placed into Group B and those children who fell one standard deviation or below were placed into Group C. Thenormative data derived from the raw scores for the population regarding

Mean L

Mean Length of Response will not compareto normative data derived from the middle class population but rather each child was compared with his particular segment of the popula-tion. The individuals' scores were used later in the programs as base lines of verbal behavior. The childs' progress was assessed in terms of his movement away from these baselines.

Intra-program mobility was to be determined by the Speech Pathology Consultant to the programs. Intra-program mobility refers to the movement of any child from one group to another either in a positive or negative direction. For example, if child A was assessed at the end of a end of a three month period and his score was found to have increased in such a manner as to place him in a higher group this movement would be termed 'intra-program movement'.

Provisions were made to screen new arrivals into the program at periodic intervals, (i.e., once a month).

Following the screening and assignment of the children to the appropriate language group, a series of in-service training programs for the teachers and teacher assisstants at each center was conducted. The curriculum of these training programs included giving each teacher and teacher assisstant insight into the communicative needs of each child that was assigned to their group. A brief interpretation of each childs evaluation was used as a point of departure for these discussions. Further, group training sessions were conducted in which the teachers were shown how to observe and record the speech and language behavior of their children. Following this ,speech and language behavior mod--ification techniques were demonstrated through the use of pre-recorded, programmed video-tapes in which operant conditioning procedures were used in small group language training classes. When the teachers demonstrated to the consultants that they understood the basics of the technique, they were given opportunities, under close supervision, to use the technique with small groups of children in a language learning situations. These sessions were video-taped and reviewed by the teacher and speech pathologist. This rec-ording procedure greatly facilitated this learning process. Initially, the consultants found that during the first few such practicum sessions , the teachers behavior became so goal-directed that she frequently appeared automaton -like in her lesson presentation.

To counteract this potentially detrimental behavior and yet to maintain the essentials of the technique, discussions were held with the teacher to assist her in discovering what inherent behavioral characteristics that she had that shocould potentially reinforcing to the children. In this way the teacher could use these behaviors as reinfor--cement for the children contingent upon desired language and behavioral responses.

During the in-service portion of the program much emphasis was placed upon methods of recording responsex rates of the childrens language behavior,as well as how to develop lesson plans using specific behavioral objectives. The consultants found that, as the training program progressed, lesson-planning moved from the "I'm going to teach body parts this week" stage to "Each child in my group will be able to identify...by pointing to...10 of the following 12 body parts". Methods of recording responses during a language class which required a minimum amount of time on the teachers part were demonstrated. The importance of response recording was emphasized in the belief that the progress of the children could be more easily seen by the teachers and thus would have reinforcing properties for them. Further, it would facilitate decision-making on the teachers part with regards to when criteroon levels were met and when to move on to the next step in the language program for her group.

As soon as the teachers at a given center demonstrated a sufficient ubderstanding of the program and the technique to be used, the program was put into operation. One of the two consultants then moved to the next center while the other consultant continued to make daily visits to this first center, providing assisstance, demonstrations, and supervision on an "as needed" basis. Gradually, these visits were weaned to a once-a-week level as the program strengthened at that center. This procedure was followed until all centers were operating.

As has been mentioned the program is followed and evaluated at each cebter on a weekly basis by the speech pathology consultant. Based upon the observations of the consultant, each center is rated with respect to the efficiency with which the language program is being carried on. Specific problem areas are noted during the morning obs--ervation and then discussed with the teachers during the afternoon staffing session.

This weekly evaluation allows the consultant to adjust areas of the program before significant reductions in pupil perfomance reaches problem proportions. By reviewing the progress of each child at the center, based on response records and the reports of the teacher, children with consistantly low performance can be identified and brought to the speech and hearing clinic for in-depth evaluations and therapy if needed.

During the second year of operation other classes and activities were coordinated with the language classes so that a maximum amount of carryover could occur. For example, if a group of children were working on a language unit on body parts, the art activities would be designed so that the art unit emphasized the drawing of figures which included the specified body parts. Art teachers were included in the daily staffings so that they were kept abreast of not only the goals of the language unit but also what types of language behavior are to be modeled and reinforced. Outdoor activitees are also coopdinated in this manner. For example, if the language is on body parts, an activity such as "Simon Says", in which the child must point to a particular body part, is used. This coordination,in effect, expands the language program from one half hour to an hour and one half.

Briefly, the steps for each language unit of instruction moves from the learning of vocabulary from a receptive to an expressive language level. The terminal goal for each unit includes the learning of unit material to the extent that the child will be able to express appropiate ideas about the material using intelligible verbal responses that grammatically and syntactically compare to those used by other children his age.

It should be mentioned that every child receives a speech language evaluation semi-annually, and a hearing screening on an annual basis. Only one consultant is now necessary to provide ongoing supervision. A speech and hearing technician trained in a special program for speech and hearing supportive personnel at the Speech Pathology and Audiology Institute of the University of South Florida, now assists the speech pathology consultant with the semi-annual screenings. This has released another speech pathologist to evaluate and provide individual and small group therapy to those children demonstrating significantly low performance in the language program.

In summary we have described a program of speech and hearing services provided by

consultants from the Speech and Hearing Division of MacDonald Training Center to a group of 250 pre-school children from a high-risk population. It hopefully illustrates one manner in which a minimum number of sppech and hearing professionals can be effective in reducing the occurence of communication disorders through structured preventive programs.

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Several "Byways" for Productive Study in the Evaluation and Education of Deaf-Blind Children

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The Influence of Heterogeneity:

The heterogeneous nature of the population of deaf-blind children in any country, program or classroom is probably obvious and definitely desireable if we are to meet the needs of the presenting numbers of severely injured children. However, the heterogeneity, in one sense, still persistently causes me a great deal of anxiety when I am asked to lecture concerning "the deaf-blind". The task bears a relationship to conducting one's own CEC Conference in a two hour session since the educational classification of deaf-blind cuts through every other presumably descriptive classification of exceptionality in children and touches every area of supportive service. But in another sense that breadth of problems encountered in the population designated as deaf-blind presents, potentially, a very strong source of influence on attitudes, methods, and teacher preparation in special education, on public education concerning the exceptional and their families, and particularly on development of services for very severely injured children and their families.

The population referred to us as deaf-blind suggests that many professionals seem to be uncertain of the boundaries of the classification. The uncertainty is due, at least in part, to inadequate program provision for a wide-variety of multi-handicapped children. Using the referral population as our base of description,

- Deaf-blind children are those children
  - who demonstrate response to sound which is deviant from normal,
  - who suffer from interference with oral language development - for the most part very serious interference - due to sensory, perceptual, and/or cognitive limitations or disabilities, and
  - who have a visual defect or limitation which the teacher must be consciously aware of physical, material or sensory adjustment for maximum communication and/or language development.

As a consequence of these behaviours, each deaf-blind child demands individualized evaluation, on-going medical treatment and surveilance,

individualized program planning and, usually, indivdual instruction or management, in order to develop his maximum capability.

Therefore, type of educational facility required is not a vital facet of the definition of a "deaf-blind child." Some children in the referral population who are blind and deaf without amplification can be managed more than adequately, with sensory aids, proper teacher orientation, and some supportive service - physical therapy and speech therapy, in particular - in regular classes for blind children, for deaf children, for aphasic children, or for mentally retarded children.

In summary, the deaf-blind child is defined by his auditory-visual defects or limitations, his oral language deficit or disorder, and the coordinated long-term cooperation between professional groups which he and his family demand.

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Somewhat more than 125 children with auditory-visual defects or disorders have been involved in our educational evaluation process at Perkins since Jan.1970. This experience has raised several intriguing questions or problem areas which I would like to refer to briefly since I believe that they describe sources of possible direct help to individuals in the deaf-blind population.

Heart Disease and Its Effect on Learning:

The majority of the congenital rubella children referred to us have, or have had, congenital heart disease. The very delaying effect of serious heart disease on early gross motor development is well-documented (Linde, Rasof, and Dunn, 1967); the long-term effect of persistent, untreated heart disease which does not cause cyanotic symptoms for many years seems less clearly described.

We have a dramatic case in our Department of early gross motor delay with congenital heart disease. Leslie is 14 years old now. He is legally blind with correction and has a moderately severe sensori-neural hearing loss which responds well to amplification. The etiology is maternal rubella in the first trimester. Leslie had a congenital patent ductus arteriosus. Until his heart surgery at 3½ years, he was reportedly extremely weak, could not sit up alone, and had very frequent nose bleeds. Following the surgery, he sat unsupported at 4 years and he stood and walked alone at 5-4. He has continued to develop slowly, but happily. He has considerable motor awkwardness and a tendency to emotionally over-react often; but he has lost much of his giddiness and hyperactivity of younger years. He speaks fairly articulately of things personally experienced but still has to stare at the ceiling and rally all his mental power to utter a single straight sentence. He is sociable and conversational, and has the ability to responsibly and proudly carry-out simple jobs around the school. He has a measured I.Q. of approximately 50 on the Ontario Examination for Deaf Children.

Perhaps another important case is Tim. Tim is one of a number of other congenital rubella children in the Department whom we have been able to follow for some years now. All of them were able to organize themselves when they entered the Department to perform on the Ontario Test well enough to score between 50 and 60. Above and beyond the score, individual differences in behaviour and specific abilities were apparent and have resulted in somewhat different development in each child. All of the children have learned to communicate via. language to some useful degree - except Tim. As a child, his play was extremely perseverative. As an early teenager his behaviour is sometimes bizarre in its childlike exhuberance; and sometimes he is curiously sensitive to people's feelings and very interested in their activities shared

with him. He began to learn to speak but, rather soon, tapered off and now is learning little in oral communication although he understands the idea of language, can imitate reasonably well, has a near normal threshold of hearing with a hearing aid, and, in fact, uses a number of words spontaneously.

Tim has an interesting cardiac history. In 1966, a complete cardiac study listed PDA with pulmonary hypertension; no peripheral pulmonary artery stenosis was present and no abnormality of the aortic valve. Recent evaluation noted clubbing or cyanosis of nail beds as questionable and evidence of left ventricular hypertrophy. Comment continued: "Congenital PDA has produced a secondary pulmonary artery hypertension; pulmonary vascular disease usually accompanies pulmonary hypertension and there has been a slight progression in this regard. Changes are very likely to increase slowly with the passage of time. Life will probably be considerably shortened."

The possible relationship of Tim's deterioration in learning and his aphasic behaviour to the distortions in mental processes and the aphasic behaviour caused by vascular disease and hypertension in adults may be important. Perhaps Tim's situation is instructive to us in planning the care of younger children. We suggest that,not infrequently, surgical procedures are not undertaken by particular physicians because of the very multiple handicaps of a child and his limited mental ability.

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Contribution of Neurology to Treatment:

For some time now we have been discussing problems and possibilities with several neurologists. Some of the children after neurological study have been placed on regimes of tranquilizers, anti-convulsants and so on. This source of help has been relatively unrewarding. For the most part, we have found that:

- It is often difficult for those working with the child to really evaluate the effectiveness of medication or of a change in medication - unless the effect is seriously adverse to the child's behaviour. Our teachers are good observers of behaviour; however, the state of a child's being can change during any given week for a multitude of reasons having nothing to do with the medication - particularly illnesses, his interpersonal contacts, a change in a teaching approach.

- When a positive effect of medication is seen, it has been actually very minimal in our population.

For some time we have been interested in the phenomenon of light-gazing. Our neurologically-directed probes in this direction have contributed little, directly, to the children's welfare - except in one case - which may make all the other queries worthwhile.

Tony was always very "turned-on" by visual effects - by flashlights, spinning electric fans, the reflected light in a camera lens, the television screen. He would become very excited, very motorically tense and totally pre-occupied by it. A recent EEG recorded diffusely abnormal cortical activity. Dilantin has helped him somewhat; he is more in contact with the environment and somewhat more organized in his responses. A most pertinent article by Dr. Maurice Charlton (1965), a Neurologist, at Columbia University, mentions the fact of some children inducing their own petit mal attacks "by mimicing critical flicker frequencies by passing their spread fingers before their eyes at an appropriate rate"; he mentions that occasionally the effect is brought on by a sudden access of sunlight. We would suggest only that thorough neurological evaluation is important in these cases.

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Genetics as a Source of Information:

Another source of pertinent knowledge for treating a segment of the deaf-blind population lies in genetics. Recently we have been referring through the Genetics Clinic at Mass. General Hospital.

The case records of children suggest that, due to the rubella epidemic and the consequent interest in and referral of seriously injured children, there is a tendency on the part of medical persons to label, with considerable authority, any child, as congenital rubella if he has cataracts of any type, auditory dysfunction, and physical and mental retardation, although there may be no actual titer study or historical evidence to support such a diagnosis. In actual fact, there are a number of genetic syndromes which also include cataracts, impaired hearing and mental retardation, as well as heart murmur or heart disease, and failure to thrive.

A small textbook on syndromes of mental retardation by Gellis and Finegold (1968) describes 18 syndromes (out of a total of 83) which involve significant defects of both vision and hearing. Of these 18 syndromes, there are 8 which involve a degree of hearing loss and visual impairment which would definitely result in a referral as deaf-blind. Five of these,

- icthyosis erythroderma
- Hallerman-Streiff syndrome
- osteopetrosis
- congenital rubella

and - congenital syphlis,

involve variable levels of intelligence, from normal, to severe mental retardation. Three other syndromes,

- trisomy 13-15
- Lowe's syndrome

and - sebaceous nevi,

involve moderate to severe mental retardation.

This very small textbook gives only a hint of the variety and number of syndromes, many genetically determined, which involve deaf-blindness. One can quickly add more from personal experience:

- Friedrick's ataxia
- Usher's syndrome
- retinoblastoma with secondary hearing loss
- Marfan's syndrome
- congenital diabetes,

and so on.

In the Evaluation Group at Perkins, we believe that it is our responsibility to give as much information to parents as we have available to us concerning their child's physical and mental condition and - <u>if requested</u> - about prognosis for life span, likelihood of acquisition of language, upper limitation on academic attainment, possibility of marriage, areas of working capability, ability to maintain an independent life, and so on. Therefore, it becomes important for us to <u>recognize</u> the possible genetic causes of deaf-blindness,

- the progressive nature of some of them.
- the possibility of inheritance in other.
- the anticipated development of physical or psychiatric problems in addition to those of vision and hearing in some instances.

For some families, a genetic work-up and counselling is important. In other cases - admittedly rare ones - bio-chemical intervention or diet control can alter the course of the disease process.

In a recent article on Usher's syndrome, which involves inherited retinitis pigmentosa and hearing loss as well as other characteristics, the author (McCay Vernon) mentions that many professionals who would encounter cases of Usher's syndrome are not aware of it as a syndrome nor of its genetic nature; therefore, parents do not receive proper counselling and the deaf child's visual deficit may not be detected for some time.

At the moment in the Department at Perkins we have 63 children with the following etiological break-down:

32 - definite congenital rubella.
- 5 of these have additional etiological possibilities, prematurity, mongoloid sibling, meconium in the aminiotic fluid and stressful birth, etc.

8 - cases in which probability of maternal rubella is high but the mother had no signs of illness.

5 - premature births.

1 - congenital hypothroidism and retinoblastoma.

1 - congenital diabetes.

3 - advantitiously handicapped:
  1- meninigitis.
  2 - accidents.

9 - genetic syndromes:
  2 - retinoblastoma.
  2 - CNS progressive ataxic disease.
  1 - facio-scapulohumeral dystrophy.
  1 - one of the sub-variants of Usher's Syndrome.
  1 - Marfan's syndrome, plus hearing loss.
  2 - congenital icthyosis erythroderma.

4 - unknown.

.....

Research clearly indicates that genetic make-up does influence physical structure, organic functioning, temperament, tendency toward certain disease processes and differences in intelligence. While recognizing this, providing for medical, neurological and genetic study and hoping for consequent specific help for a particular child via these disciplines, obviously the child must be trained or educated. In "Time" magazine this week, it is mentioned that there is little hope at the moment for change through genetic intervention, that we rely on "tender care and inspired teaching to insure the maximum development for each child.

.....

Curriculum Material for Young, Partially-Seeing Deaf Children of High Trainable or Educable Classification.

At Perkins this past summer, hopefully to foster even more inspired teaching, we wrote a draft of eleven chapters of a curriculum for young, visually-oriented, deaf-blind children. The material encompasses the normal "pre-school" period in concept development, from infancy to 6 years, and the basic period of language development, infancy to 3 years. The material does not well apply to deaf-blind children who have characteristics of very low-trainable or custodial children;

that is, children who have extreme difficulty forming associations other than those directly affecting or involving the vital life processes, the limbic processes as Geshwind (1964) refers to them (feeding, drinking, eliminating and emotionality). Grossly speaking, we generally classify young children who have a basal level below one-third their chronological age and a ceiling performance of about one-third as low trainabile. These children are probably best helped through building of everyday response patterns by principles of behaviour modification applied in a stable, attentive, caring environment.

Our curriculum, geared toward high trainable and educable children, does not rely on techniques of clinical behaviour modification per se. The bases described for facilitating learning are:

1. A teacher who intends to teach,
   who enjoys the child and respects the person in him,
   who does not panic into inactivity when learning problems are encountered nor when negative responses are made to her initial efforts,
   who has an understanding of how language develops and of the pre-requisites for engagement of the child at each level.

   This is a teacher who communicates herself to the child always and looks for the child's communication of himself. When these criteria for teacher attitude and knowledge are met, strangely enough, deaf-blind children who are moderately mentally retarded, echolalic, who have serious attention problems or who are autistic, do, in fact, learn without particularly special methods of instruction.

2. Secondly, a developmental approach and developmental schedules are helpful in providing a base for assessment of the child's ability to perform and for aiding teacher choice of particular task-type appropriate for an individual child.

3. Thirdly, recognition of very real limitations and disabilities in learning must result in modification of teaching style, in method of presentation of specifics, and in actual approaches in the area of communication development and beginning language; for example, one modification is a shift to manual communication.

Choosing Between Oral and Manual Language
for an Individual Deaf-Blind Child.

Some of you may have attended the session on Tuesday concerning research on manual communication for deaf children. Unfortunately, I could not. For those of you who attended, I hope I am not duplicating information by mentioning briefly several points made in research concerning the ability of deaf students to attain oral linguistic competence.

Ability of a congenitally deaf child to utilize the oral mode apparently is dependent upon the inter-relationship of various capacities - not upon any single capacity alone:

1. Myklebust maintains that general intelligence is a factor in successful acquisition of speechreading, particularly related to high scores on the Draw-a-Man Test, to visual memory for digits but not for visual movements on the Knox Block Test, and to scores on the WISC Picture Arrangement Test.

2. He suggests that success in speechreading may be related to personality type. There seems to be a positive correlation with the ability to maintain interpersonal relationships and to empathize.

3. Relationship of hearing level to language development is complex. Costello (cited in Myklebust) found the hard-of-hearing to be superior to the deaf in language development. Myklebust states that beyond a certain level which is not clearly defined (perhaps 80 db average, ASA) the degree of deafness is of less consequence than intelligence, personality, and verbal aptitude. This view is supported by Hirsh who points out the case of Leonard Dowdy who became totally blind and profoundly deaf at the age of 19 months from meningitis, who never had amplification, and who achieved exquisite oral language through the tactual mode. Hirsh points out that the features of spoken language are most completely carried by the acoustic form which can be received best by the ear or by touch.

Another fact is important to us: Teachers have not been unsuccessful in teaching oral language to children who are deaf and who also demonstrate behaviour suggesting classification as developmental or congenital aphasia. (Kirby).

Considering the complex nature of speech and the perceptual task involved in receiving it, and the high incidence of characteristics in the deaf-blind population which are those of the variety of language disorders other than hearing loss, the need for use of manual communication with some young deaf-blind children certainly seems obvious. At the moment, rather than a Combined Method, we advocate making a choice between speech and fingerspelling for language presentation as early as possible in the child's life without excluding the possibility of oral language for him.

As a guide to making a decision between fingerspelling and speech, we have outlined the generally characteristic behaviours of partially-seeing, hearing-impaired children who seem to have reasonable success on an oral program. The criteria are to be applied when the child has demonstrated a solid mental age of 2½ to 3 years on the Ontario Test or on similar perceptual-cognitive tasks. It is likely that the ability to demonstrate such a level of thinking and performance will concur with a readiness for language learning. An obtained "plus" on the list is in favor of oral instruction and a "plus" in the first category is a <u>necessary</u> qualification for an oral program:

1. Demonstrated intelligence as related to hearing level:

___ Performance on non-verbal tests yielding an I.Q. of 80 - or preferably higher.
___ If the I.Q. is below 80, hearing (aided or unaided) should be a primary avenue for speech reception.

2. Demonstrated capacity for symbolic behaviour:

___ Use of voice to protest.
___ Use of pointing to communicate <u>to a person.</u>
___ Use of voice to call attention of a person, shortly after pointing emerges.
___ Reasonable clarity of gestural communication.
___ Personal creation of natural gestures.
___ Imaginary play with miniature toys: acting out personally observed experiences.
___ Picture recognition - in its true representation sense; looks with curiosity and understanding.
___ Ability to match similar pictures.

___ Attempts to draw a person.
___ Ability to point to the picture in the series which is different.

3. Demonstrated social interaction:

___ Interest in other children and attempts at interaction.
___ Attention to faces as sources of communication cues.
___ Responds to direction from people.
___ Frequently attempts to communicate with people - not just about his needs.
___ Readily tries to imitate movement.

4. If a trial on oral language has already been made, the following factors are favorable to a choice of oral mode:

___ After attention to speech was established, several words were responded to in a structured situation within a few weeks.
___ After a number of words were uttered expressively in the classroom by the child, he began to use them spontaneously in other situations.
___ After approximately 50 words were acquired expressively, he began to put two together to express a thought.
___ Imitation of phonemes is fairly good.
___ Imitation of paired phonemes is fairly good.
___ Interest in learning to speak; puts effort into the process.

In addition, one must also consider whether: a) speech has been made as clear to the child as possible via amplification and tactile means as well as visual, b) whether the child has been involved in a total oral atmosphere in which the adults sincerely tried to provide motivation and a model for spoken language, c) the length of time in which he has been receiving language instruction, and d) his age.

5. ___ Absence of physical conditions inclined to be offensive to people and to result in frequently encountered aversion to contact-communication via touch, such as severe skin conditions as in congenital icthyosis erythroderma.

6. ___ Absence of physical conditions interfering significantly with the production of speech - dysarthria, severe cerebellar ataxia affecting speech, conditions related to muscular dystrophy, facial nerve dysfunction, and so on.

I do not want to suggest in any way that manual communication will save every child nor that it eliminates all deterrents to language acquisition nor that every deaf-blind child needs to use manual communication. I do know that many deaf-blind children in our school have found the acquisition of language and of knowledge far easier via fingerspelling and as a consequence self-concepts have improved with manual instruction and communication with more people and more complete communication of thought and feeling has been achieved. I also know that a few totally deaf-blind children can become totally fascinating, independently responsible, linguistically competent oral adults, in which cases each of us does see something of a miracle. We are attempting to discover early which child's talents lie in which direction so that time is not lost.

.....

The question of ability to learn language and the reasons for some children's rapid learning via a visual (fingerspelling system) mode as opposed to an auditory/tactile (speech) system is not a totally separate problem from our initial speculations regarding neurological and cardiac conditions of congenital rubella children.

Rorke and Spiro (1967) describe the effects of rubella encephalopathy as a degenerative process affecting primarily the white matter of the brain and resembling those caused by anoxia. In nine children at autopsy, he noted degeneration of blood vessels, focal ischemic necrosis of tissue and retardation of myeline. Geshwind (1962, 1965) describes deconnection syndromes (damage to the corpus collosum) caused by anoxia and various degenerative processes affecting the vascular system which result in language disorder, characterized by varying types of inability to make cross-modal, auditory-visual-tactual associations. If congenital rubella children do suffer from deconnection syndromes and if we can describe this behaviour, we may have important additional test material to add to our criteria for choosing mode of language to be developed in an individual deaf-blind child.

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Repleb (Reinforcing Purposeful Language and Behavior): A Cooperative Summer Language and Behavioral Program at Harrison Cottage

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The problems presented in attempting to establish language in a "low level" cottage in a residential state facility for the retarded are not unknown to this group. Let me review them briefly, however, so that those aspects which seem pertinent are clearly understood.

1) The attendants spend the majority of their time in toileting, dressing, feeding, clearning and protecting children from serious harm to themselves and others.

2) Little cooperative play or adult directed activities of a type enjoyable to the child occurs to serve as a stimulus for language development.

3) Constructive and self-help behaviors in such children are often at a very minimal level. This is due, in part, to the way these particular children are selected for such programs. It may also be due to the lack of time available to teach such behaviors and the inappropriate climate for instruction.

4) The physical setting is often that of a large day room where children spend much of their time. Although such children are typically pulled from the cottage for special activities such as at the playground or in foster grandparent programs, in fact, most of their waking time is still spent in the day room in what might optimistically be described as free play.

5) The use of consistent reinforcement, although desirable, is difficult to maintain in such a setting due to the lack of personnel and the seemingly infinite variety of reinforcers

which these children may or may not respond to.

6) Such children spend much of their time in apparently non-purposeful, idle behavior such as waving the hand, flipping the head, or ambling about the room.

There are several principles involved in contemplating establishing a language training program for 5-8 year old children within their own cottage. One of these principles is that the expansion rather than the correction model should be used. Expecting that such children will respond to correction is not feasible. The typical parent in establishing language in his child, uses the expansion model wherein what the child says is expanded on by the parent, phrased into appropriate grammatical structure and often translated into more specific and fresh new words for the child. The child historically has often responded to this expansion by ultimately learning the vocabulary and grammatical structures modeled by the parent. This same model, the expansion one, appeared desirable in planning language training for this age group.

A second principle is that a way must be found to continue language training beyond any special effort initiated on a short term basis. There is now considerable evidence to indicate that unless such training continues over the span of years that might ordinarily represent his pre-school and elementary school life, language learned may be soon forgotten. Although it is not possible at this point to say whether having learned language by the age of 14 the child will retain it, it seems quite likely that he would do so. Speech pathologists have often described this problem as the one of carry-over. Fortunately, the behavioral modification approaches used in other

areas of behavior provide for schedules for reinforcement and shaping procedures which seemed likely to have direct effect on the carry-over problem.

Another principle for such planning is that it is not feasible to teach isolated behaviors. The child who shrieks or screams, instead of speaking seems likely to have a direct relationship between the shrieking/screaming and the fact that he does not speak. Similar relationships between talking, toileting, and eating and verbal behavior seem likely. The point is, it is unlikely that great progress will be made in establishing language in the presence of children with behavioral problems unless the program is planned to modify the child's behavior concurrent with establishing language. Children with behavioral problems frequently spend much of their time at the cottage level, pre-occupied with their maladaptive behavior. If we wish the child to adopt adaptive behavior, such as language, a count must be taken of the starting, ongoing, initial, behavior. The child cannot speak, for example, while he is gritting his teeth.

Another principle is that vocabulary and grammatical structure desired must be identified in advance. With children who lack language we must provide settings for frequent use of language and consistent reinforcement. To do this we must know the specific language which is to be established. Without a vocabulary list and grammatical patterns to be taught, too divergent language stimulation will occur. Too inconsistent reinforcement will happen. The child will not have a clear idea of what it is he is to learn.

Criteria for when the child has learned a word or grammatical pattern need to be established. The rationale here was that without such criteria it would be a moot

point as to when the child should be moved from one level of achievement to another. Time would be lost in overtraining the child on a given word or grammatical pattern, or alternatively, the child might not retain the language taught because of an inadequate estimate of whether he had acquired the pattern or not.

Another principle is that language training must be reinforcing to the child. Mowrer believes that in terms of early language acquisition, the child imitates language around him because it represents food, fun, and friendly companionship. Of the several ways of establishing this kind of meaning for language, approaches such as game theory, material reinforcers, social reinforcement, and being permitted to do frequently occurring behaviors seemed to be likely ways of accomplishing this goal.

The establishment of language, constructive behaviors, and self-help skills in this group of children appeared, therefore, to be a very desirable goal. It would permit staff employed at the cottage to have additional time for working with the child in educational or behavioral pursuits. It would also change the attendants role to a more desired one. Attendants in such cottages carry a very great work load and perform under circumstances which may be more difficult for them than for the child. Only their devotion and concern keeps them at work.

There are other possibilities in benefits from such a program. Among these are the possibility that a child might be inappropriately placed because of language delay or behavioral problems. Purposeful language and behavior programs, accompanied by reinforcement, might help the child make adequate gain to move into other programs.

Another possible gain is that of lowering the cost of care due to a lack of need for frequent medical care. Such need often results from self-abusive or destructive tendencies of other children or epidemic infections encouraged by poor toileting, eating, or other self-care habits of the child.

Potential benefits are many; the problem is how to achieve the goal. This paper presents one approach in planning to achieve the goal. Such programs must be based on the old familiar adage that we must start where the child is in behavioral modification terminology, we must record behavioral records of the child to determine those behaviors done frequently, identify those which are related to the target behavior and reinforce these until they occur at a high operant level then selectively reinforce until they closely approximate the target behavior. Accordingly, behavioral records were run on the forty children in Harrison Cottage at the Sunland Center in Fort Myers. Not all of these will be presented here; however, two illustrative examples are these.

The first child (A) began the day by trying to get attention from the observer and playing with other children. Around midday she laid on the floor foran hour. She imitated another child through the day. It is apparent by reinforcing attention seeking, imitation and giving her a nap in the middle of the day, behaviors in the direction of the target can be obtained.

The second child (B) interacts with other children frequently but has a good deal of head banging, aimless ambling, and other behaviors which are not in the appropriate directions. With (B) it appears best to reinforce interaction with other children to get the target behaviors.

Similar identification of target self-help and constructive behaviors in the program was done cooperatively with cottage life, speech pathology, education, and psychology personnel of the facility and the university. The target behaviors were first identified in terms of the specific event and frequency of occurrence we wished the child to perform. Self-help behaviors were those given below:

Behavior	Frequency
Wash and dry face and hands	3 times per day
Brush teeth	3 times per day
Dressing and undressing	once each day
Lacing shoes	once each day
Verbalizing toilet needs	6 times per day or 100% of times necessary

Cooperative play and constructive behaviors: (minimum time or frequency per day)

Finger painting	5 minutes
Playing ball	returns ball 10 times
Playing musical instruments such as hitting two sticks together.	5 minutes
Crayoning on large sheets of paper	5 minutes
Outside sand and water play	10 minutes
Pulling pull toys	10 minutes
Hammering and sawing with plastic hammers and saws	5 minutes
Looking at picture books	2-5 minute periods
Listening to stories and music	2-5 minute periods

Running on a signal	5 times
Ring-Around-The-Rosy	5 times around
Jumping	10 times sequentially
Waiting	2 minutes

Language responses were keyed to these self-help, cooperative and constructive behaviors. Initially the clinician modelled the behavior and presented the key language model, employing the following phrases: "What now?" followed by one of the following phrases, as appropriate: wash hands and face, brush teeth, get dressed, bath time, tie shoes, go pottie. "Let's paint, play ball, music time, let's draw, play in the sand, play in the water, let's hammer, let's saw, look at the book, listen to the music, and let's wait." Initially children who follow either the behavior or the verbal model with a response to it or a duplication of it are reinforced. The requirement is progressively higher day by day. Once the child produces a given response ten times, clinicians are instructed to, reinforcement is to be based on a higher level, more complex, or a more lengthy response until the total response is made by the child, the complete verbal model is presented until the child responds with his response. This is done by asking the question, "What now?", giving the response and then fading the response out while the child continues to echo the model. An example might be "What now?", "Let's run." The response of "Let's run"is modeled to the child initially and later faded when he consistently echoes it. Under these conditions, children move from echoic behavior (in Skinnerian terms) to verbal interaction directly. The clinician could finally ask, "What now?" and get a response of, "Let's run", if that was what the child wanted.

Although many of the behaviors themselves can be expected to be reinforcing, the clinicians will have available (and dispense many from aprons with pockets) raisins, sugar coated cereals of the Froot Loop type, tokens, M&M's, Sugar Dots, sips of Coke, pieces of ice, pieces of fruit, sips of orange juice, verbal praise, smiles, hugs, pats, and hand holding. Material reinforcers are paired with social reinforcers when given.

Tokens in the program were difficult to plan for; washers and poker chips seemed likely to be swallowed by this particular population. Pieces of solid vinyl flooring appeared washable, durable, and too large to swallow. "Purses" are to be used for storage of tokens so that the child will have a way of hanging on to his tokens until he wishes to redeem them. A store will be used to redeem tokens from children. In the store children will be able to purchase small (but not small enough to swallow) objects and other items which are indicated previously as reinforcers.

The cottage is structured with a forty patient population. The program is planned for a four hour teaching period, 7:30 to 11:30 in the morning, and a four hour teaching period from 1:00 to 5:00 in the afternoon. During this time period, the children in the program are under the direction of twelve clinicians with the exception that toileting, dressing, bathing, and injuries are managed by the cottage life staff. Each clinician will have from three to four children. Grouping will be based on the behavioral charts, age and size.

A STATEWIDE PLAN FOR HEARING IMPAIRED CHILDREN IN ILLINOIS*

PROBLEMS AND PROGRESS

Hazel Bothwell
Illinois Office of the Superintendent of Public Instruction

Hearing impairment in children may well be one of the most tragically neglected and misunderstood of all handicapping conditions.

It is a strange paradox that educators universally agree that one's first language is learned through hearing and that language is the primary vehicle for all human communications and thought, and yet, despite this recognized relationship between hearing and learning, no State that I know of requires a hearing test on children before placing them in classes for the mentally retarded--or any other class for that matter. At last count, only ten states had an educator of the hearing impaired grapple with this complex and misunderstood handicap in children. in the State Department.

The design of a Statewide Plan for the Hearing Impaired being presented today is the result of practically ten years of determined effort in Illinois to bring this problem into

focus--and as a result of its findings, the State now seems convinced to the point of action, that hearing impairment in children may truly be the most neglected educational handicap in the schools today.

SECTION I-PROBLEMS

In presenting this paper, Section I will deal with problem areas, and statistical information presented on slides. Section II will deal with progress and plans for the immediate future.

1. READING NORMS OF DEAF CHILDREN

Conducted by the Bureau of Educational Research, New York City, and the Conference of Executives of American Schools for the Deaf.

Survey of 54% of all deaf pupils in the United States in 1958-59 receiving instruction in special schools and classes, both day and residential for the purpose of establishing reading norms for deaf children.

Grouped into broad categories, the hearing losses were:

Decibel loss 49 or less---- 4.6% of pupils

Decibel loss 50 to 84----- 39.3%

Decibel loss 85 or more----- 56.1%

Results showed that deaf children

Age 12.2 had an average reading level of second grade 7th month

Ages 15 and 16 had an average of grade 3.5

For children of age 10.2 to those of age 16.2

the difference in terms of grade equivalent was from 2.4 to 3.5. Little more than one year gain in a six year period.

This study on reading norms of deaf children made a great impact on our State at the time of its publication in 1959. The study included children in classes for the deaf throughout the nation and revealed, as noted above, an average reading achievement scores of grade 2.4 for children ages 10 years 2 months and a reading achievement score of 3.5 for children age 16.2 As devastating as this information was, it was equally disturbing to note that a considerable number of children with hearing losses termed "moderate" were included among the deaf, causing one to wonder whether these hard of hearing children were (1) so neglected as to be functioning as deaf children (2) had other multi-handicaps or (3) had no other program available. In our own state even at the present time, over 80 counties out of 102 have no special education programs for hard of hearing children other than speech correction.

2. Survey by the Illinois Commission for Handicapped Children, 1962, on Identification of School-Aged Children with Hearing Loss.

The following responses are important--

Of the 1758 School Districts reporting:

(1) Over 50% did not have regular screening programs;

(2) There were no statewide standards for the regularity and method of testing;

(3) Testing was done by individuals representing ten occupations or combinations of programs;

(4) Of those responsible for administering tests, 21% had no training

(5) Two-thirds of the test equiptment was not calibrated;

(6) 10% of the respondents did not notify parents or physician regarding the child who failed the test;

(7) Only one-third of the people making educational recommendations had any training in this area.

The above statistics of a statewide survey to determine coverage and efficiency of hearing testing services revealed gross inadequacies in standards, procedures of testing, and training of personnel. It is important to comment that nowhere in Illinois did and educator of the hearing impaired participate in making educational recommendations on hearing impaired children.

3. Reported in Health Conditions of Children and Mothers in Chicago and Suburban Cook County published by the Welfare Council are statistics of hearing loss from a Head Start Program showing "the number of children reviewed for this defect 17,115; number of defects-943." Of this group one child was known to have received educational follow-up.

This report emphasizes the educational gap, and reveals the serious breakdown between case finding among a group of preschool children and referral for educational screening by the

special educator. It is noteworthy that hearing testing was implemented, but it seems unrealistic that only one child found his way to special education out of 943 identified failures--and this at a time in the child's life when he is most amenable to remediation.

4. HEARING TESTING OF CHILDREN ENROLLED IN SPECIAL EDUCATION

Hearing tests were administered to children already placed in special education classes in one special education cooperative program. Results were as follows:

Hearing tests administered-406
Failed hearing tests -117

Types of Handicap	Number tested	Failed	Percentage
Retarded	227	72	31%
Emotionally Disturbed	41	13	32%
Learning Disabilities	76	17	20%
Unclassified	62	15	25%

This exploratory study of the hearing testing of children in classes for other handicapping conditions shows that a large number of these children had some degree of hearing impairment which had heretofore been unidentified. In some cases it was the underlying handicap.

5. HARD OF HEARING CHILDREN IN AN ILLINOIS COMMUNITY

Previous to this study, none of these children had been referred to the director of special education for educational follow-up. They were currently enrolled in the regular classroom.

Number with known hearing loss:

3 in kindergarten, 23 in first grade,

10 in second, 72 in third, 23 in fourth

12 in fifth, 9 in sixth, 10 in seventh,

4 in eighth, and 15 in high school.

Number with significant loss—127

(30 db ASA or greater in speech range)

Reported school achievement:

28 had failed at least one grade

43 were termed underachievers

28 were termed withdrawn

17 were social problems

11 were felt to be participating members

of their classes

9 were fitted with hearing aids.

Intelligence quotients were reported to be as high as 140, yet no child was accelerated in any subject.

The above study reports the identification of hearing impaired children from a review of children's records in the school files. These hearing impaired children were known to nurses, speech correctionists, social workers, and other professionals but had not been referred to the director of special education for an educational screening since the losses were reported as "mild" or "moderate" and the full significance educationally was not suspected. A questionnaire survey to the teachers showed that in most cases the teacher knew the child had a problem but seldom attributed it to a hearing loss. Children with high frequency losses were

particularly vulnerable. As the slide indicates, performance tests were as high as 140 I.Q., yet none of these children were accelerated in any school subject.

6. This report is from A Study of Some Effects of Hearing Impairment Upon School Performance, requested by the Office of the Superintendent of Public Instruction, in Illinois, and conducted by Dr. Stephen Quigley, Professor of Education, Institute for Research on Exceptional Children, University of Illinois, Urbana. It was a follow-up to the previous study, and is specific to school achievement in the language areas.

Hearing Threshold Level (Better Ear) (ISO)	N	IQ	Word Meaning	Paragraph Meaning	Language	Subtest Average
Less than 15 dB	59	105.14	-1.04	-0.47	-0.78	-0.73
15 to 26 dB	37	100.81	-1.40	-0.86	-1.16	-1.11
27 to 40 dB	6	103.50	-3.48	-1.78	-1.95	-2.31
41 to 55 dB	9	97.89	-3.84	-2.54	-2.93	-3.08
56 to 70 dB	5	92.40	-2.78	-2.20	-3.52	-2.87

This research study was conducted in the same school community as the preceding exploration. Audiological evaluations and school achievement tests in the language areas were systematically performed on a group of children who had failed the school hearing testing program, that year. It should be noted that for every subtest in every hearing level category (with one exception) actual performance was lower than the expected average performance.

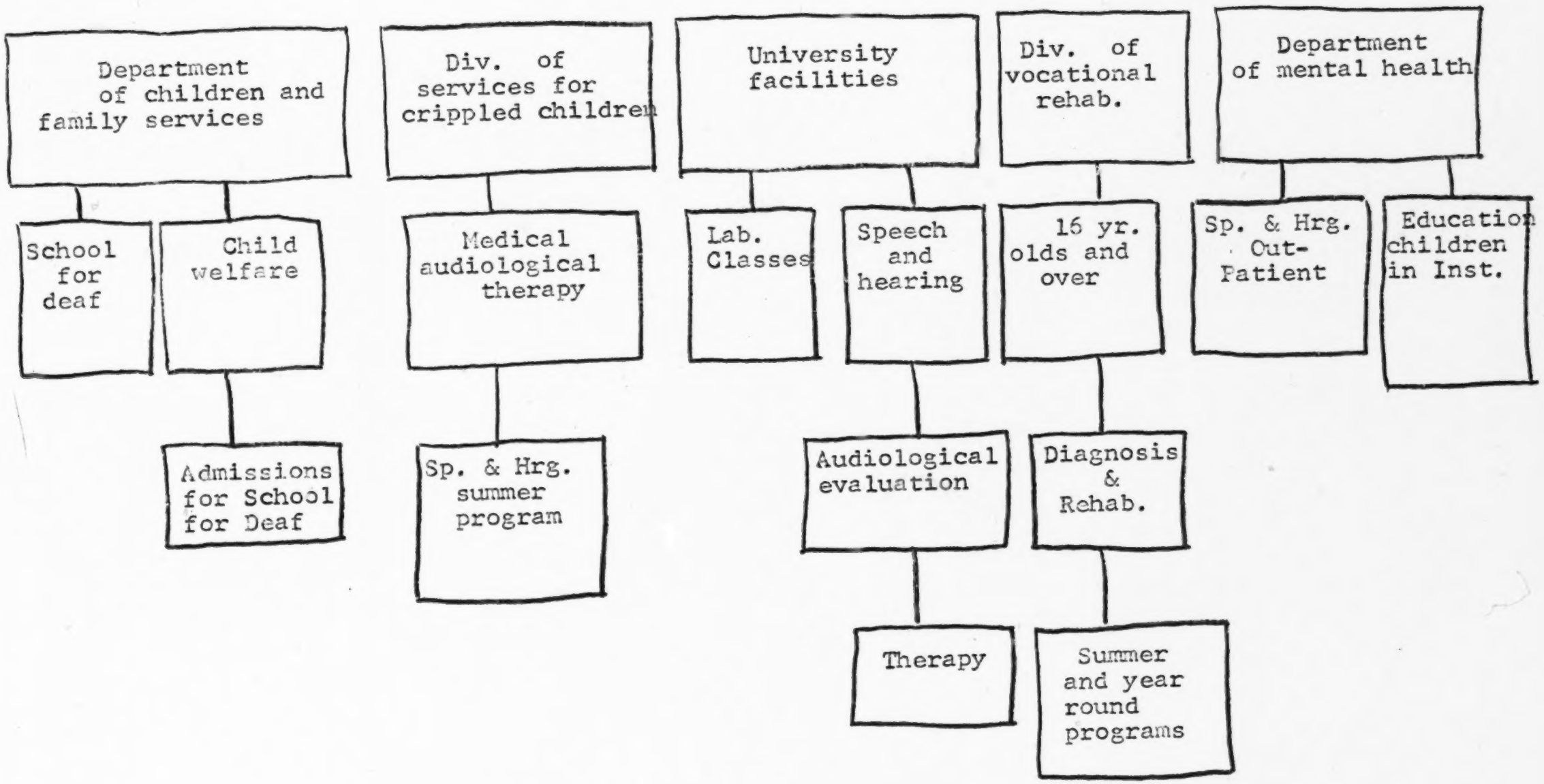
The seeming discrepancies of the severe group may be because the underachievers have dropped out of school leaving only the more "successful" hearing impaired student in the study.

There was also a steady progression in academic retardation on eachsubtest as the degree of hearing loss increases. In this study, children with even slight hearing loss showed some degree of language retardation. The implications for prevention and for supportive educational programs to children are vast in scope.

7. CLARIFICATION OF THE ROLE OF AGENCIES--The graph on the next page shows interagency activities, and demonstrates how easily a child could be mismanaged by our lack of a coordimated program, with five different agencies dealing in various ways in the educational placement of children. Parents and professionals alike grope ineffectively for proper channels to obtain comprehensive planning for children. Clarification of the role of each agency seems essential.

8. SPECIAL EDUCATION PROGRAMS IN PUBLIC SCHOOLS --In many areas of the State, educational services for hearing impaired children within the public school setting were limited. Existing classes, primarily for deaf children were scattered and ungraded; evaluations of children were inadequate and infrequent, and supervision by an experienced teacher of the deaf was practically non-existent. While some children seemed to be doing well, the majority were functioning far below their potential.

AGENCIES OTHER THAN THE STATE EDUCATION AGENCY OFFERING EDUCATIONAL SERVICES A SERIOUS PROBLEM IN COORDINATION



SECTION II-PROGRESS AND PLANS FOR THE IMMEDIATE FUTURE

The major points of breakdown were now recognized in the areas of identification, medical and audiological evaluations, treatment, and educational programming. The need for coordinated comprehensive programs and services on a statewide basis was obvious. The question was how to proceed with this gargantuan task of the establishment of comprehensive programs and services on a Statewide basis.

The following progress report will span a five-year period and review the current status of developements. Also, a brief explanation of policy or legislative change which brought about this progress, will mentioned.

The attached map shows the present geographic area engaged in regional programs and planning for the hearing impaired. The regions are in no way final at this time, but were developed aroung populated regions and include children from within a radium of two-hours week-end travel time to their homes.

Coordinated educational programs began through policy changes in the 1964 Rules and Regulations governing State reimbursement for approved programs, requiring:

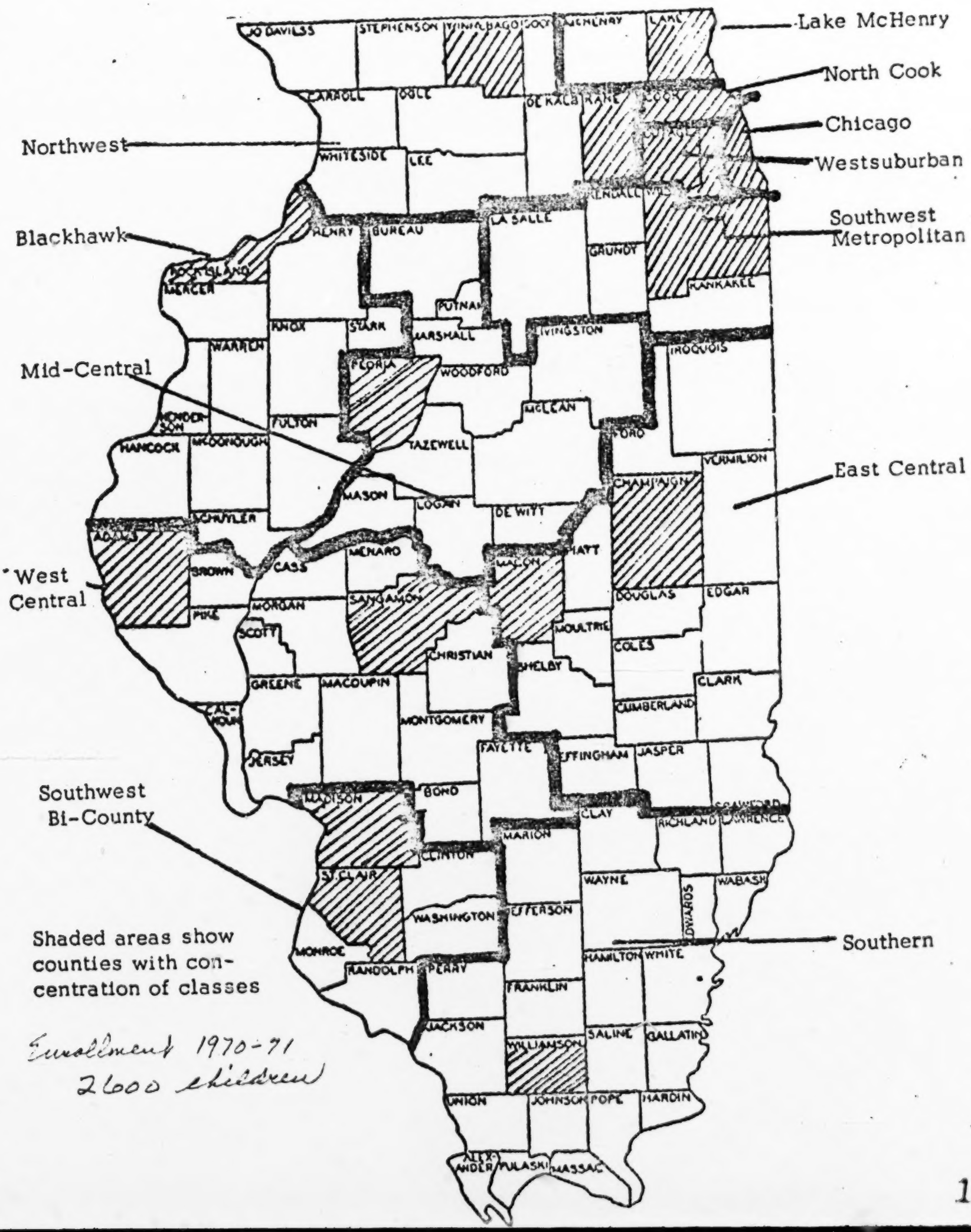
1. A Minimum size for approved programs of six classes at the elementary level and at preschool.
2. Specific and on-going evaluations of children.
3. Supervisions by a qualified, experienced educator of the deaf.

Preschool programs were stimulated through legislations by increased financing (1963) in the amount of $10,000 for a preschool teacher team with a ratio of 10 preschool children

REGIONAL PLANNING AREAS

EDUCATIONAL PROGRAMS FOR THE HEARING IMPAIRED

1970-1971



Enrollment 1970-71
2600 children

to each team. This was followed by the passage of House Bill 1407 effective in 1969, for mandatory education of all handicapped children. Parents were influential in their demands for services. The problem became increasingly difficult and was aggravated by inadequate evaluations, limited space, poor auditory enviroment and shortage of qualified personnel.

In 1965, a special State study committee, including the State Office of Education, was established within the framework of the Illinois Commission on Children to assist the State in the development of a coordinated interagency plan for programs and services on a statewide basis. The Illinois Commission is a statutory Commission and is the most powerful legal body in the State dealing with problems of children. Not only does it provide a means for studying the problems, but it pursues the recommendations and sponsors legislation if necessary.

The 2-1/2 year study of the Commission was reported in 1968 in A Comprehensive Plan for Hearing Impaired Children in Illinois. It established a firm base of operation for unified state planning and spearheaded interagency development of programs and services on a regional basis.

It also sponsored in 1969, Senate Bill 324, the Child Hearing Test Act, for early identification of children, requiring hearing testing services no later than a child's first enrollment in any nursery or child care center. It also requires joint action by the Illinois Department of Public Health and the Office of the Superintendent of Public Instructions in establishing standards for indentification, medical and audiological evaluation, and referral for educational screening and necessary

special education services.

The State has laboriously searched out its problems and designed a workable plan for comprehensive programs and services on a state-wide basis.

To implement these recommendations a State Advisory Committee on the Education of the Hearing Impaired has been established by the Office of the Superintendent Of Public Instruction to coordinate interagency planning. Simultaneously, it formed a special committee to spearhead a study on Proposals for the Administration and Finance of Regional Programs for the Hearing Impaired. The introductory statement is quoted below.

THE PROBLEM AND RECOMMENDATIONS

Excerpts from the Proposals for Administration and Finance of Regional Programs for the Hearing Impaired, Office of the Superintendent of Public Instruction.

"The State of Illinois is greatly concerned about the critical problem of hearing impairment in children and recommended in a report of the Illinois Commission on Children, the establishment of comprehensive programs and services on a regional basis throughtout the state, as a means of combating and preventing the tragic and needless waste of the learning potential of hearing-handicapped children and youth.

Such regional programs within the framework of the public schools will necessitate a network of local educational programs and services within special education organizations and also the establishment of

certain central facilities for use by all school districts within specified regions. These central programs and services for the region will involve: (1) Construction of special facilities for children with severe and profound hearing losses, (2) Educational evaluation and diagnostic unit, (3) Modern audiovisual media and equipment, and (4) A highly specialized staff.

School districts should be able to assume their responsibility within joint agreements for the educational programs and services for children with partial hearing loss but they are totally unable to meet the additional heavy financial demands for funding of the centralized facilities and staff necessary to the total regional program.

To meet these critical needs on a statewide basis the Committee on Administration and Finance recommends all approved centralized programs and services in each specified regional program for the hearing impaired be financed one hundred percent of the costs of construction and ongoing annual expenses as is now the policy of the State for similarly handicapped children attending the Illinois School for the Deaf.

Services to deaf children at the Illinois School for the Deaf are essential in every respect and must be continued. But, in addition, it is now necessary to provide equal funds for equal services to deaf children in all regional programs for the hearing impaired approved by the Department of Special Education Program Development and Evaluation, Office of the Superintendent of Public Instruction."

The State Superintendent of Public Instruction has now proposed, for inclusion in his school budget, a line item of $500,000 for the school year 1971-72 for the planning of regional educational programs throughout the public schools; and for the proper preparation of personnel involved in programs and services for deaf children, in critical areas of need.

A breakthrough has definitely been made. Parents, professionals, and deaf persons have been challenged into unified action; and the child should be the winner. The real work is, as usual, just ahead; but the decade of the 70's is bringing new hope for the education of hearing impaired children throughout the State of Illinois.